FINAL REPORT

Demonstration of In Situ Treatment with Reactive Amendments for Contaminated Sediments in Active DoD Harbors

ESTCP Project ER-201131

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14. ABSTRACT
The objective of this project was to demonstrate and validate the placement, stability, and performance of reactive amendments for treatment of contaminated sediments in active Department of Defense (DoD) harbor settings. This project extended current pilot-scale testing of the application of activated carbon (AC) to decrease the bioavailability of polychlorinated biphenyls (PCBs) in contaminated sediment to near full-scale demonstration under realistic conditions at an active DoD harbor site.

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Activated carbon (AC), hydrophobic organic compounds (HOCs), powdered activated carbon (PAC), reactive amendments, bioavailability, polychlorinated biphenyls (PCBs), contaminated sediment.

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ACRONYMS AND ABBREVIATIONS

μg	microgram
μm	micrometer
AC	activated carbon
ANOVA	analysis of variance
AquaBlok	AquaBlok, Ltd.
AquaGate	AquaGate + PAC™
AST	Acid-Soluble Thiol
AWA	Area weighted average
BC	black carbon
BNC	Bremerton Naval Complex
C	Celsius
CAD	confined aquatic disposal
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CIA	Controlled Industrial Area
CL	confidence level
cm	centimeter
CoC	chemical of concern
Cu	copper
CVAA	cold vapor atomic absorption
Cy	cubic yard
°	degrees
DL	detection limit
DoD	Department of Defense
DVR	digital video recording
ELISA	Enzyme Linked Immuno-Sorbent Assays
ENR	enhanced natural recovery
ERDC	Engineer Research and Development Center
ESTCP	Environmental Security Technology Certification Program
ETV	Environmental Technology Verification
f_{OC}	fraction organic carbon
ft^3	cubic foot
g	gram
GC/MS	gas chromatography/mass spectroscopy
geomean	geometric mean
GPS	global positioning system

H'	Shannon-Wiener Diversity Index
hexa-CBs	hexachlorinated biphenyls
Hg	mercury
HOC	hydrophobic organic contaminants
ICP-MS	inductively coupled plasma – mass spectroscopy
IQR	interquartile range
J'	Pielou’s Evenness Index
K_d	soil-water partition coefficient
kg	kilogram
K_{OC}	soil organic carbon-water partitioning coefficient
L	liter
LED	light emitting diode
ln	natural logarithm
LSD	Least significant difference
lw	lipid weight
m^2	square meters
max	maximum
MCL	maximum cleanup level
MCUL	minimum cleanup level
MeHg	methylmercury
mg	milligram
mg/kg	milligrams per kilogram
min	minimum
mL	milliliter
MLLW	mean lower low water
mm	millimeter
MNR	monitored natural recovery
NAVFAC	Naval Facilities Engineering Command
NBK	Naval Base Kitsap
NCP	National Oil and Hazardous Substance Contingency Plan
ND	not detected
ng	nanogram
NOAA	National Oceanic and Atmospheric Administration
OC	organic carbon
OM	organic matter
OU B	Operable Unit B
PAC	powdered activated carbon
PAHs	polycyclic aromatic hydrocarbons

Pb	lead
PCB	polychlorinated biphenyl
PDMS	polydimethylsiloxane
penta-CBs	pentachlorinated biphenyls
p_i	proportion of individuals in each species to the total number of individuals in each sample
PO	Performance Objective
PRC	performance reference compound
PSAMP	Puget Sound Ambient Monitoring Program
PSNS&IMF	Puget Sound Naval Shipyard and Intermediate Maintenance Facility
PSU	practical salinity unit
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action
RAO	remedial action objective
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
RSC	rapid screening characterization
s	second
SAMMS	Self-Assembled Monolayers on Mesoporous Supports
SARA	Superfund Amendment and Reauthorization Act
SD	standard deviation
SDI	Swartz dominance index
SEA Ring	Sediment Ecotoxicity Assessment Ring
SERDP	Strategic Environmental Research and Development Program
sig	statistical significance
SITE	Superfund Innovative Technology Evaluation
SOP	Standard Operating Procedure
SPI	sediment profile imaging
SPME	solid phase microextraction
sq. ft.	square feet
SQC	sediment quality criteria
SQS	Sediment Quality Standards
SSC Pacific	Space and Naval Warfare Systems Center Pacific
T_0	time 0
tetra-CBs	tetrachlorinated biphenyls
THg	total mercury
TOC	total organic carbon
tri-CBs	trichlorinated biphenyls
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency

ww	wet weight
XRF	X-ray fluorescence
Zn	zinc

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EXECUTIVE SUMMARY

E.S.1. TECHNOLOGY

In this study, *in situ* remediation of surface sediment contaminated with hydrophobic organic compounds (HOCs) was demonstrated by placing a reactive amendment consisting of powdered activated carbon (PAC) at a site contaminated with polychlorinated biphenyls (PCBs) located at the Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS&IMF), Bremerton, WA. The PAC was successfully placed on the seafloor of a half-acre target site to sorb PCBs in sediments, thereby reducing bioavailability and limiting bioaccumulation of contaminants into the tissues of benthic invertebrates, and subsequently the food web. The sorbent material, AquaGate+PAC™ (AquaGate, AquaBlok, Limited, Toledo, OH) was specifically manufactured by coating an aggregate core with PAC held in a bentonite clay binder, to enable deep water placement of the material on the sediment surface. The AquaGate, which is denser than water, sinks rapidly through the water column directly to the surface of the sediment. Over a short period of time (days), the PAC coating of the AquaGate releases from the aggregate and becomes mixed with the underlying sediment. Natural mixing, specifically bioturbation, incorporates the PAC into the surface sediments over time. AquaGate was placed with a conveyor belt-type equipment, which demonstrated the ability to rapidly and evenly place the material both in the open water and areas under structures such as piers and between pilings.

For contaminated sediment sites such as those near infrastructure (i.e. piers and bulkheads), in harbors, ports and shipyards that present challenges to dredging and capping as remedies, *in situ* remediation may be a preferred alternative. In addition, *in situ* remediation may be suitable in areas where dredging will cause destruction of sensitive habitat or where contaminant concentrations do not warrant removal. Also, conventional sand capping may not be possible at sites where water depths must be maintained for navigational channels and berthing areas as well as where there are concerns with propeller wash. Implementation of remedies in deep water and active areas present cost and logistical challenges for many remedies. Prior to this project, the majority of the *in situ* sediment amendment efforts have been small, pilot-scale efforts in areas without significant limitations to access and generally targeted to low velocity waters with minimal vessel traffic or harbor activities. This project demonstrated the placement and quantitative integration of a suite of common and novel monitoring tools to evaluate amendment stability and performance in deep water (15 m) at an active Naval shipyard with high vessel traffic. A key goal of this project was to extend pilot-scale efforts to larger scale footprints in active Department of Defense (DoD) harbor areas. This study demonstrated that reactive amendments are a viable tool for solving contaminated sediment challenges at DoD sites.

The site selected for this demonstration faces such challenges. Sediments adjacent to and beneath Pier 7 at the Puget Sound Naval Ship Yard & Intermediate Maintenance Facility (PSNS&IMF; Bremerton, Washington) lie within Operable Unit B (OU B) Marine and are subject to Superfund cleanup. Areas within OU B Marine were identified to contain concentrations of total PCBs determined to be suitable for remediation by *in situ* treatment methods as an alternative method to dredging in achieving cleanup goals.

E.S.2. RESULTS

Performance objectives (PO) were established to evaluate the goals of this demonstration as summarized in Table ES-1 below. Quantitative POs were defined for statistically significant reduction in the bioavailability of contaminants of concern (CoCs) namely Total PCBs as congeners and homologs. Qualitative POs were defined for detecting the presence, uniformity of placement, and stability of the amendment, and evaluate benthic community response to the amendment. Concentrations of Hg and MeHg (MeHg) were also measured for tracking purposes.

Table ES-1. Performance objectives for Project ER-201131.

Performance Objective	Data Requirement	Success Criteria	Results
Quantitative Performance Objectives			
(1.) * Verify amendment performance in the laboratory.	Bioaccumulation results for *Neanthes arenaceodentata* compared to control exposed to site sediment amended under a range of mixing conditions.	• Reduction in biouptake of target CoC (PCBs) in treatment compared to controls. • Target > 50% reduction in PCBs. • Hg and MeHg measured for tracking purposes only.	Met (Met for 24-hr mix and 1-month mix which were most similar to field conditions)
(2.) Demonstrate amendment associated reduction in contaminant bioavailability in the field.	SEA Ring deployments to measure *in situ*: • Bioaccumulation in polychaete and bivalve tissues. • Porewater concentrations with passive samplers.	• Significant reduction (>50%) in bioaccumulation of PCBs compared to baseline. • Hg and MeHg measured for tracking purposes only.	Met (Met for PCBs)
(3.) Demonstrate reduction in contaminant bioavailability is sustained over time.	SEA Ring deployments to measure *in situ*: • Bioaccumulation in polychaete and bivalve tissues. • Porewater concentrations with passive samplers.	• Reduction in bioaccumulation compared to baseline is sustained greater than 2 years. • Hg and MeHg measured for tracking purposes only. • ·Same success criteria as Performance Objective 2.	Met (Met for PCBs)
Qualitative Performance Objectives			
(4.) * Demonstrate detectability of amendment using SPI visual monitoring methods in the lab.	Lab SPI images of control, no mix layer, and 2 mixed layers.	• -Amendment was qualitatively distinguishable from native sediment in SPI images.	Met
(5.) Demonstrate uniform deep water placement to target area.	SPI images; TOC and BC analysis of sediment cores.	• Amendment evenly distributed at target thickness (~2±1 in) • 2.1 - 4.1% increase in TOC and BC content in surface sediments. • - Within ~90% of the target area as indicated by SPI surveys.	Met (Met for SPI, visual analysis of cores, diver survey, and TOC)
(6.) Demonstrate amendment physical stability over time.	SPI images; TOC and BC analysis of sediment cores.	• Amendment remains evenly distributed laterally while mixing vertically over time. • Same success criteria as PO 5.	Met (Met for SPI, visual analysis of cores, TOC in 10-, 21- and 33-month events, BC in 3-, 10-, and 21-month events)
(7.) Evaluate benthic community changes in response to amendment.	Benthic community census data.	No or minimal adverse impact in benthic community ecological health metrics.	Met

*Objective performed as part of a laboratory study prior to field demonstration

**The POs were demonstrated with monitoring tools including the Sediment Ecotoxicity Assessment Ring (SEA Ring), Sediment Profile Imaging (SPI) system, benthic community analysis, and measurements of total organic carbon (TOC), black carbon (BC), and CoC concentrations in sediments, tissues, and passive samplers.

E.S.3. PERFORMANCE EVALUATION

PO 1 was met by verifying amendment performance with site sediments in the laboratory prior to demonstration in the field. This was evaluated with *ex situ* bioaccumulation testing with the polychaete worm *Neanthes arenaceodentata* and sediments from Pier 7. Concentrations of total PCB in tissue from the control sediment (unamended) were compared to amended site sediment under a range of mixing conditions (no mix, 24-hour mix, and 1-month mix). The concentrations of total PCBs in tissue exposed to amended sediment were reduced by more than 50% and were statistically significantly lower than the concentrations in tissue exposed to the control for the 24-hour and 1-month mix amendments, which were most similar to conditions observed at the Pier 7 field site.

PO 2 was the demonstration of amendment associated reduction in contaminant bioavailability in the field. This was evaluated with *in situ* bioaccumulation testing to obtain tissue concentrations and passive sampling to obtain concentrations in sediment porewater. The bioaccumulation testing utilized Sediment Ecotoxicity Assessment Ring (SEA Ring) technology with the polychaete worm *Nephtys caecoides* and bent-nose clam *Macoma nasuta*. *In situ* passive sampling was conducted with solid phase microextraction (SPME) to provide a chemical measure of PCBs in sediment porewater. The PO was considered met if concentrations of total PCBs in the 10-, 21-, and 33-month monitoring events were statistically significantly reduced (at least 50% reduction) from concentrations in the baseline. This PO was met for total PCBs (Figure ES-1), with biological and porewater results generally indicating an average decrease in bioavailability of 84% from the baseline. Concentrations of total PCBs in *M. nasuta* tissue were reduced 68%, 82%, and 88% on average in the 10-, 21-, and 33-month events compared to the baseline, respectively. Concentrations of total PCBs in *N. caecoides* tissue in the 10-, 21-, and 33-month events were reduced 87%, 89%, and 97% on average compared to the baseline, respectively. Concentrations of total PCBs in sediment porewater from baseline to 10-, 21-, and 33-month events were reduced 75%, 86%, and 81% on average compared to the baseline, respectively. Total mercury and methylmercury were tracked for informational purposes only, but results were unclear regarding the efficacy of the amendment to reduce mercury or methylmercury bioavailability. Concentrations of total mercury and methylmercury in *M. nasuta* and *N. caecoides* were below risk-based thresholds and generally consistent with ambient/natural levels. Overall, there was a general lack of consistent differences among the monitoring events, indicating the amendment did not have a detectable effect on bioavailability. This does not necessarily indicate activated carbon would be ineffectual in reducing mercury or methylmercury bioavailability in sediments, because it is possible reductions in bioavailability would be more measureable if baseline levels were greatly elevated above ambient/natural levels.

PO 3 was the demonstration of amendment associated reduction in contaminant bioavailability in the field over time. This was evaluated with the same analyses as discussed for PO 2, but was focused on the 33-month event. The PO was met because concentrations of total PCBs in the 33-month event were significantly reduced (at least 50%) from concentrations in the baseline (Figure ES-1).

The reduction in concentrations of total PCBs in *M. nasuta* tissue from baseline to 33-month event was 88% on average. The reduction in concentrations of total PCBs in *N. caecoides* tissue from baseline to 33-month event was 97% on average. The reduction in concentrations of total PCBs in sediment porewater from baseline to 33-month event was 81% on average. Total mercury and methylmercury were tracked for informational purposes only as discussed in PO 2.

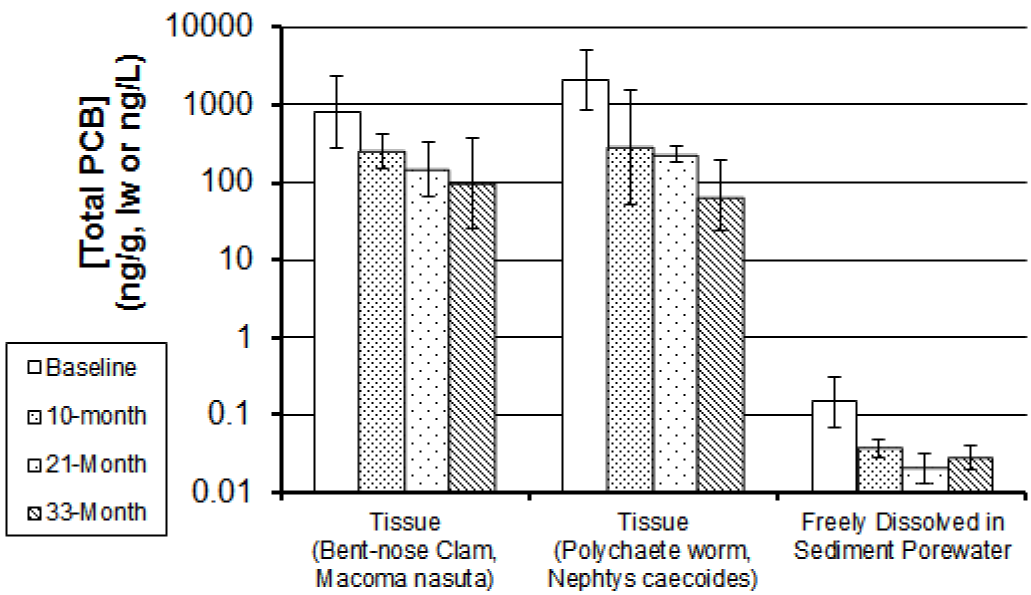

Figure ES-1. Summary of Reduction in Concentrations of Total PCBs in Tissue (Lipid Normalized) and Sediment Porewater.

Results are shown as mean ± 95% Confidence Level (CL).

PO 4 was met by demonstrating that the presence of the amendment could be detected using the SPI camera system in the lab prior to demonstration in the field. The SPI images in sediment for control and the three mixing conditions (no mix, 24-hour, and 1-month) were qualitatively distinguishable from native sediment.

PO 5 was the demonstration of the uniform deep water placement of amendment to the target area. This was evaluated with the SPI camera system as well as total organic carbon (TOC) and black carbon (BC) content analysis in sediment cores at three intervals (0-5 centimeters [cm], 5-10 cm, and 10-15 cm below the sediment-water interface). Observations in the baseline characterization were compared to the 0.5-month monitoring event. The performance objective was met if:

- The amendment was evenly distributed with an approximate target thickness of 2±1 inches. This was observed with images from the SPI survey.
- The amendment was present in approximately 90% of the target amendment placement area. This was observed with images from the SPI survey.
- An increase in TOC and BC content in surface sediments (0-10 cm below sediment-water interface).

This performance objective was met for the approximate thickness (the average thickness was greater than target 4 inches) and met for the presence within the target area (80% of the target area received measurable or trace deposits of AquaGate). Diver survey provided further confirmation the amendment was placed within the target area and the PAC coating was no longer on the aggregate core. An increase in TOC content in surface sediment (0 to 10 cm below sediment-water interface, as the average of the 0-5 cm and 5-10cm intervals) was an average of 50% greater than in the baseline. Based on BC content, placement did not meet the performance objective, as BC content decreased an average of 3% in the surface sediments (0-10 cm below sediment water interface). This may be potentially due to analytical issues with the measurement of BC content and high presence of shell hash in many samples.

PO 6 was the demonstration of the stability of the amendment over time. This was evaluated with the same analyses and success criteria as discussed in performance objective 5 with comparison of observations in the 3- (TOC/BC content only), 10-, 21-, and 33-months and the baseline characterization. Based on SPI surveys, approximately 75%, 65%, and 65% of the target area retained measurable or trace deposits of the amendment with average thicknesses of 6.9 cm, 11 cm, and 8.8 cm, respectively. This performance objective was met for the approximate thickness and met for the presence within the target area (80% of the target area received measurable or trace deposits of AquaGate). This performance objective was met for TOC content in surface sediments (0-10 cm below the sediment-water interface as an average of the 0-5 cm and 10-15 cm intervals) for the 10-, 21-, and 33-month events with increases of 124%, 52%, and 20% on average from the baseline, respectively; however, in the 3-month event an average decrease in TOC content of 2% was observed. This performance objective was met for BC content in the surface sediment (0-10 cm below sediment-water interface); in the 3-, 10-, and 21-month events, average increases of 7%, 91%, and 18% from the baseline were observed; however, an average decrease of 55% was found in the 33-month event.

PO 7 was the evaluation of the native benthic community for changes in response to amendment placement. This was evaluated with comparison of benthic community census results obtained in the baseline characterization and reference stations to the 10-, 21- and 33-month monitoring events. This performance objective was met if there was no observed adverse impact to the benthic community as evaluated with six indices: total abundance, species diversity, taxa richness, Pielou's evenness (J'), Swartz's dominance index (SDI), and percent abundance of the five most abundant taxa. This performance objective was met.

The SPI surveys found no difference in the percent of stations with evidence of Stage 3 taxa in the baseline, 10-month, and 21-month surveys; however, the percent of stations with Stage 3 taxa within the target area were lower in the 0.5- and 33-month surveys. The cause of the apparent retrograde of successional stage at the berthing area in the 33-month was unknown; however, it is likely that physical disturbance due to ship movement near the pier was the cause of the decline. Further monitoring of the Site would help understand if the retrograde was due to temporary conditions at the Site or is sustained for a longer duration.

E.S.3. IMPLEMENTATION

Cost is an important factor in remedy selection. Based on this demonstration of AquaGate at Pier 7 (0.5 acre site), the total to implement the technology at full scale would be $603,000 for placement and monitoring (AquaGate is $450 per ton). These costs are an estimate, based on professional judgement, and may be lower or higher when specific site considerations are taken into account. Cost drivers include shipment, placement complexity and access, and monitoring requirements.

A cost analysis evaluated three site scenarios with varying levels of complexity. At Site 1, a 5 acre site with contaminated surface sediments within deep waters of a harbor complex with infrastructure such as piers and bulkheads present. The site has high levels of refuse on the sediment bottom which must be removed prior to dredging and dredged materials classified as hazardous waste. In this first scenario, placement of AquaGate and monitoring was estimated to cost $2,323,000 while dredging costs were $3,305,000. At Site 2, a 3 acre site with infrastructure such as piers and bulkheads present, in an environment of high tidal flows, and dredged materials classified for upland management (non-hazardous landfill) were considered. In this second scenario, placement of AquaGate and monitoring was estimated to cost $1,514,000, dredging costs were $1,525,000, and capping (sand cap with significant armoring) costs $1,800,000. At Site 3, a 1 acre site in a calm, depositional environment with dredged material suitable for upland disposal with minimal pretreatment was considered. In this third scenario, placement of AquaGate and monitoring was estimated to cost $788,000, dredging costs were $317,000, capping (sand cap with minimal armoring) costs $650,000, and monitored natural recovery extending monitoring costs were estimated at $1,000,000. An important consideration in selection of AquaGate as a remedy, particularly in deep water areas in which bioturbation is an important mechanism for mixing, is the depth of contamination. Depth of mixing varies among sites. In addition, when considering dredging remedies, the impacts of resuspension and residuals must be considered as well as potential additional costs for restoration, which often times is required. In general, the use of *in situ* treatment is far less invasive or destructive to existing habitat.

These costs are an estimate and may be lower or higher when specific site considerations are taken into account. For example, for a 5 acre site AC application, Patmont et al. (2015) estimated field placement to be up to $3.72 per square foot (sq. ft.) compared to $9.29 per sq. ft. estimated here and $0.93 per sq. ft. for long term monitoring compared to estimates of up to $22.96 per sq. ft. estimated here.

Activated carbon (AC) amendment as a contaminated sediment remedy is of great interest to the research and regulatory community as there have been 25 field studies of AC *in situ* treatment of contaminated sediments in the past 10 years (Patmont et al. 2015). The technology evaluated by this study may be suitable for implemented in a variety of environmental conditions from shallow, quiescent, flat bottom settings to deep water, variable or sloping water depths, tidal environments with active vessel traffic and infrastructure. This technology would be of great interest as a remedy to HOC-impacted (e.g. PCBs, PAHs, and pesticides) surface sediments in association with Superfund sites and sites implementing remediation in response to equivalent state and local regulations (e.g. Clean Up and Abatement Orders, Total Maximum Daily Loads, etc.) associated with contaminated surface sediments. The technology may be limited to sites with contamination to depths within the site specific mixing zone (dependent on various factors including bioturbation depth, contaminant concentrations, and porewater velocity).

The product tested had ability to be placed around infrastructure (e.g. piers and bulkheads) where dredging may be found to be more expensive or infeasible. Another advantage was the ability to place the amendment in navigational channels and berthing areas where capping may be infeasible due to water depth requirements. Additionally, AquaGate is considered to be a green remediation strategy which can help minimize the environmental footprint of cleanup.

Placing the reactive amendment at Pier 7 presented significant challenges including security access, scheduling, deep water placement, working near and under waterfront structures, complex bathymetry and dredge cuts in berthing areas, strong and variable tidal currents, and possible disturbance from ship movement and other harbor activities. In this project, 141 tons of AquaGate were successfully placed on surface sediments at Pier 7 within 4 days from the arrival of the tugs to the verification of the placement by the divers. Due to scheduling, most of the under pier placement was performed at night (low tide) which made visual verification of the placement location by the operator more difficult. In addition, the small size of the pilot plot area did not provide the operator with much time to refine placement technique prior to installation. As a result, placement procedures could be improved which may have avoided placement in areas outside the target area. Additionally, uniformity of the amendment thickness could be improved. Monitoring at Pier 7 was conducted with diver assistance for deployment and retrieval of the SEA Rings and passive samplers. Also, measurements of TOC and BC content in sediment with presence of shell hash and armoring from a previous sand cap placed along the pier presented further challenges.

Although AC has been shown for decades to be effective at treatment of air, water, and wastewater, there remains some uncertainty as to the long term effectiveness of sequestration treatment in the field. Traditionally, dredging and conventional sand capping have been the most commonly accepted approaches to sediment remediation. Any remedy that leaves untreated contaminants in place, such as in situ sequestration, may have the potential for risk of re-exposure of the contaminants. However, the risk from potential effects of re-exposure may be less if low concentrations of contaminants remain in the sediment. Large-scale application has yet to be demonstrated. Further research in the long term efficacy of the treatment is needed.

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1.0 INTRODUCTION

The objective of this project was to demonstrate and validate placement, stability and performance of reactive amendments for treatment of contaminated sediments in active Department of Defense (DoD) harbor settings. This project extends prior pilot-scale testing of the application of activated carbon (AC) to decrease the bioavailability of contaminants of concern (CoC), specifically polychlorinated biphenyls (PCBs) in contaminated sediment to a full-scale demonstration under realistic, deep water and under pier conditions at an active DoD harbor site. The evaluation was conducted at Pier 7 of the Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS&IMF) in Bremerton, WA. Performance objectives (POs) were developed to evaluate the amendment performance. Because AC and the clay mineral (sodium bentonite) associated with the amendment may also sorb methylmercury in sediment, thereby reducing methylmercury bioavailability, POs also evaluated the effectiveness of methylmercury-related endpoints.

Demonstration and validation was focused on placement of the amendment in deeper water and under pier areas that support vessel traffic, physical stability and longevity of the amendment in the sediment following placement, effectiveness of the amendment in controlling contaminant bioavailability over time, and response of the benthic community to the amendment application. POs are specifically designed to assess physical endpoints (including placement, distribution, mixing and stability), chemical endpoints (including changes in PCB partitioning/sorption in the presence of the amendment), and biological endpoints (including tissue concentrations of contaminants and assessment of benthic community effects following placement). These monitoring endpoints allow examination of multiple facets to the amendment performance under an active harbor setting, including the feasibility of deep water material placement, the stability of material placement, the extent to which material placement reduces tissue residue concentrations of PCBs and methylmercury, together with the potential changes in the benthic community.

1.1. BACKGROUND

Active, deep-water DoD harbor areas pose a number of challenges to the effective use of traditional sediment remedies such as dredging, capping and monitored natural recovery (MNR). Successful demonstration of delivery, stability, and effectiveness of in situ treatment materials to address these challenges has the potential to reduce costs and recovery time frames for a wide range of active DoD sites and provide a more effective alternative to traditional methods of remediation.

Cleanup costs for contaminated sediments at DoD sites are estimated to exceed $1 billion. Cost effective remedies for sediment remediation at contaminated DoD sites are limited, particularly for active harbor areas. Currently, the primary remedial options for DoD sites include dredging, isolation capping, and MNR (USEPA 2005). Although *in situ* treatment is described in United States Environmental Protection Agency (USEPA) *Guidance for Contaminated Sediment Remediation* (2005) large scale demonstrations, implementation and acceptance remain limited, and at the time of this project, there had been no demonstrations in active DoD harbors. Dredging is expensive, energy intensive, can have adverse short-term effects such as impacts to the benthic community and surface water and often cannot be applied near structural bulkheads and beneath piers. Also, its effectiveness is often hampered by the inability to remove contaminated sediments in and around piers and structural areas common to active DoD harbors. Conventional sand-based isolation capping also impacts the benthic community, may be limited by vessel draft

requirements, can be unstable in the face of tides, currents, ship and tug movements, and has minimal capacity to control sources. MNR is generally targeted to quiescent, depositional environments and is generally thought to be poorly suited to high-energy environments subject to significant vessel traffic. The use of amendments, such as AC, promises to provide a cost effective approach to overcome these challenges and to remediate active DoD harbor areas.

At the start of this project, the majority of the *in situ* reactive amendment applications had been small, pilot-scale efforts generally targeted to areas with minimal vessel traffic, obstructions, or harbor activities. In addition, most of these efforts have focused on the use of granulated AC which are not considered to be suitable for delivery and stability in deep water active harbors due to its low density. Extending these efforts to an active DoD harbor area where propeller wash, piers, bulkheads, deep water and a range of other common challenges associated with coastal installations is necessary to demonstrate the broader, more critical application for solving DoD's contaminated sediment challenge. No cost effective technology had been demonstrated that can meet this range of challenges at the time of this project.

1.2. OBJECTIVES OF THE DEMONSTRATION

The objective of this pilot-scale field demonstration was to evaluate and validate placement, stability, and performance of reactive amendments for *in situ* treatment of contaminated sediments in active DoD harbor settings. The approach to demonstrate and validate this *in situ* treatment using reactive amendments was focused on performance issues including:

- Proper design and selection of the amendment
- Placement and physical stability of the reactive amendment in deeper water areas that support vessel traffic
- Effectiveness of the amendment in reducing contaminant bioavailability over time
- Quantification of changes to benthic habitat and benthic community structure

These demonstration and validation criteria form the basis of the POs. Data was collected in support of these POs and provided multiple lines of evidence for assessing the effectiveness of amendment placement as an *in situ* strategy for limiting chemical bioavailability at contaminated sediment sites.

1.3. REGULATORY DRIVERS

The demonstration project at Pier 7 has been conducted as a remedial action for OU B in accordance with the Record of Decision (ROD) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Implementation of the CERCLA remediation process is outlined in Title 40 of the Code of Federal Regulations (CFR) Part 300, National Oil and Hazardous Substance Contingency Plan (NCP).

1.4. POINTS OF CONTACT

This work was funded by the DoD Environmental Security Technology Certification Program (ESTCP Project ER201131). Additional funding was provided by the Navy Environmental Sustainability Development to Integration (NESDI) Program, Naval Facilities Engineering Command Northwest, NAVFAC NW, and PSNS&IMF. The points of contact for the team members listed on the cover page are provided in Appendix A.

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2.0 TECHNOLOGY

This section describes the reactive amendment technology to provide a better understanding of its functionality and operation. Also presented are past applications and the advantages and limitations of this remedial alternative, and its application at the Pier 7 site.

2.1 TECHNOLOGY DESCRIPTION AND DEVELOPMENT

The technology incorporates a combination of a reactive amendment, a conventional placement equipment, and a suite of monitoring tools. The novel aspect of the technology involves the demonstration of a composite particle system which enables the delivery of the amendment to an active DoD harbor environment, particularly in areas where piers and structures limit traditional dredging and capping methods. The amendment was placed using a composite particle system based on the AquaGate + PAC™ (AquaGate) technology platform (AquaBlok Ltd., Toledo, Ohio). AquaGate is powdered activated carbon (PAC) bound to a dense aggregate particle with clay minerals. AquaGate utilizes a coated aggregate particle as the means for achieving uniform placement of reactive amendments through deep water to the surface of the sediment. This technology has been used to deliver a range of mineral-based reactive amendments (AquaBlok Ltd. 2010). The formulation for this demonstration incorporates a nominal 5% PAC, 10% clay (sodium bentonite), and the remaining fraction of aggregate, by weight. The specifications of the PAC are provided in Appendix B.

From a placement perspective, the AquaGate particles resemble small stones and can be handled and applied with a wide range of conventional construction equipment. Due to the physical setting at this site, broadcast application with conveyor belt-type equipment (e.g., telebelt) provided a suitable option for rapid, relatively uniform placement. The concurrent demonstration of robust monitoring techniques for assessing delivery, stability, and effectiveness in reducing bioavailability were integrated for this project. The bioavailability measures incorporated Sediment Ecotoxicity Assessment Ring (SEA Ring) technology for *in situ* bioaccumulation and porewater concentration assessment, key components of ESTCP Project ER-201130, “Demonstration and Commercialization of the Sediment Ecosystem Assessment Protocol”, led by Mr. Gunther Rosen, SSC Pacific.

2.1.1 Contaminated Sediment Remediation

Persistent hydrophobic organic contaminants (HOCs), such as PCBs, when released into the aqueous environment can eventually become associated with sediment, where they may reside for long periods of time due to a combination of properties including strong sorption and slow degradation (Millward 2005). PCBs have been identified as the most common CoC in contaminated sediments in the United States (NRC 2007). At elevated concentrations, these contaminants pose long-term risks to ecosystems and human health.

The most widely used approach for remediating contaminated sediments is dredging and disposal. This approach can be expensive and disruptive to existing ecosystems. Numerous dredging projects have failed to achieve their cleanup goals because they were carried out when site conditions were unfavorable or because of dredging residual contamination, an inevitable side effect of dredging (NRC 2007). Also, dredging is not always feasible (e.g. beneath existing piers

and directly adjacent to engineered bulkheads). Capping with clean sediments, another widely used remedial option, is not always practical in sensitive environments such as wetlands or in areas where changes to the sediment bathymetry are of concern (such as navigational channels or berthing areas). MNR of sediments is a risk management alternative that relies upon natural environmental processes to permanently reduce risk to the environment (Magar et al. 2009), is generally used in quiescent, depositional environments and is generally thought to be poorly suited to high-energy environments that are prone to disrupting natural recovery processes such as areas subject to substantial vessel traffic.

While existing remedial options continue to be important and effective strategies under suitable conditions, numerous DoD and non-DoD sites face increasing demands to address contaminated sediment issues, particularly in active harbor areas where traditional remedial options such as dredging, capping and MNR may be limited in effectiveness. Due to the complexity and heterogeneity of many sites, a combination of approaches and new technologies may be needed to develop economic and effective ways to treat sediment contamination. Research in contaminated sediment management has been moving towards the use of *in situ* sorbent (reactive) amendments as a means of altering sediment geochemistry and increasing contaminant binding to reduce contaminant exposure (Ghosh et al. 2011).

2.1.2 Contaminant Sorption in Sediment

Organic matter (OM) in soil and sediment is the principal factor controlling sorption of organic compounds (Lambert 1968). Sorption to sediment is a key process in determining the fate and risk of HOCs in aquatic environments. It lowers aqueous concentrations and therefore reduces mobility, bioavailability, and chemical and biological degradation processes (Jonker and Koelmans 2002). Because of their hydrophobic nature, HOCs predominantly sorb to the hydrophobic regions of sediments. Sorption is commonly described as being a function of the organic carbon (OC) content in sediments (Jonker and Koelmans 2002). Historically, researchers have estimated the sorption of HOCs to solids (soil-water partition coefficient, K_d) using the fraction OC content (f_{OC}) and the soil OC-water partitioning coefficient (K_{OC}). This model assumes all hydrophobic chemicals partition into OM. However, some reported sorption data do not conform to this partitioning model, and researchers have observed K_d values greater than predicted. This discrepancy is explained by sediments and soils containing more than one type of carbon fraction, each sorbing chemicals with a different affinity (Accardi-Dey and Gschwend 2002).

For regulatory purposes, the OC fraction is typically taken as a measure of the sorption capacity which enables normalization of the aqueous equilibrium relationship for sediments containing different amounts of OC. However, this approach is too simplistic because OC in sediment comes in different forms that may have very different sorption capacities for HOCs (Ghosh et al. 2003). As shown by numerous research studies (Jonker and Koelmans 2002, Kraaij et al. 2002, Ghosh et al. 2003, Cornelissen 2004, Cornelissen 2005, Lohmann 2005), in addition to natural materials such as vegetative debris, decayed remains of plants and animals, and humic matter, sediment OC also is comprised of particles such as coal, coke, charcoal, and soot; often referred to as black carbon (BC). BC particles typically have sorption capacities that are orders of magnitude higher than OC comprised of natural organic matter. The importance of BC in sorption processes in sediment has led to an increasing body of research into the use of carbon sorbents to reduce HOC bioavailability in sediments (Cho et al. 2009, Cho et al. 2012, Werner et al. 2010, Cornelissen 2011, Ghosh et al. 2011, Oen 2011).

2.1.3 *In Situ* Sorbent (Reactive) Sediment Amendments

Reactive amendments are chemical or mineral-based materials designed to react *in situ* with sediments and porewater through direct contact. Contaminant bioavailability is decreased, though the total concentration of chemicals in sediment is expected to remain constant. Bioavailability is decreased by increasing the sorptive capacity of the sediment and thus decreasing dissolved concentrations of HOCs in porewater and surface water. As more emphasis is being placed on the development of alternative *in situ* sediment remedial technologies (SERDP/ESTCP 2004, USEPA 2005) and research has demonstrated strong binding of HOCs in anthropogenic and naturally occurring particulate in sediments (Zimmerman 2004), there is a growing movement towards the development and application of *in situ* sorbent amendments for contaminated sediment management.

There are numerous reactive amendments, both natural mineral sorbents (e.g. apatite, barite, bentonite) as well as engineered materials (e.g. ATS, Thiol-SAMMS), that have been bench-scale tested for their organic and metal sorption capacity (Ghosh 2008, Ghosh 2011). For HOCs such as PCBs, AC has been demonstrated to be the most effective type of sorbent. Other carbon types such as coke, charcoal, and organoclays have been suggested, but the sorption capacity for PCBs in AC is at least an order of magnitude higher than in the other sorbents (Ghosh 2003).

Laboratory studies have demonstrated field-collected contaminated sediment amended with AC amendments in the range of 1-5% reduced the equilibrium porewater concentrations of HOCs in the range of 70-99%, thereby reducing the diffusive flux of the HOCs into the water column and bioaccumulation in benthic organisms (Hale and Werner 2010). Most studies using benthic organisms show a reduction of biouptake of HOCs in the range of 70-90% compared to untreated control sediment (Ghosh et al 2011). Similar results have been noted for zooplankton, macrophytes and fish (Kupryianchyk et al. 2015). In addition to reduced uptake of HOC, increased survival in invertebrates exposed to 1% AC amended sediments contaminated with polycyclic aromatic hydrocarbons (PAHs) relative to unamended sediments was observed (Kupryianchyk et al. 2011). Similar results were recently observed in laboratory studies investigating biouptake reduction with AquaGate in PCB-contaminated sediments from the Pier 7 site. The results from this laboratory study demonstrated amending the contaminated sediment collected from the Pier 7 site with AquaGate can effectively reduce the bioavailability of PCBs to the marine polychaete, *Neanthes arenaceodentata*. Increasing AquaGate contact time with the sediment resulted in progressively lower bio-uptake with up to 94% total PCB reduction for the one month mixed treatment (discussed further in Section 5.3).

Ghosh et al. (2011) summarizes five on-going pilot-scale field studies in which activated carbon that used AC to reduce the bioavailability of HOCs in sediment. The field sites include a tidal mudflat, a freshwater river, a marine harbor, a deep-water fjord, and a tidal creek and marsh. In each case, the form of activated carbon used, the application technique employed, and suite of contaminants was different. However, each study had similar objectives: 1) assess the feasibility of field-scale application using large equipment, 2) assess the persistence of AC and binding capacity in the natural environment, 3) assess the effectiveness of the AC in reducing contaminant bioavailability, 4) assess the reduction in porewater concentrations and sediment-to-water fluxes, and 5) evaluate the effects of AC addition on the existing benthic community. Results from the tidal mudflat demonstration at Hunters Point Shipyard in San Francisco Bay showed that AC can

be placed in sediment in large scale, is physically stable in the environment and remains effective in binding contaminants in sediments several years after application (Cho et al. 2009, Ghosh et al. 2011). PCB bioaccumulation in benthic invertebrates at Hunters Point was reduced by 85-90% (Janssen et al. 2011).

A more recent review (Patmont et al. 2015) reports that in the past decade, there have been 25 full or pilot scale studies of AC *in situ* treatment of contaminated sediments. Studies reviewed included placement of AC via directly applying a thin layer of amendments (which potentially incorporates weighting or binding materials) to surface sediment, with or without initial mixing; and incorporating amendments into a premixed blended cover material of clean sand or sediment, which is also applied to the sediment surface. Notable studies reviewed include: 1) Lower Grasse River, Massena, New York, where three separate application techniques were proven to effectively deliver AC slurry with no water quality impacts, and resulted in 99% reduction of porewater concentrations of PCBs; and 2) Upper Canal Creek, Aberdeen Proving Ground, Maryland, where three AC delivery methods (SediMite, AquaGate+PAC™, AC slurry) were evaluated. With all delivery methods, reduced PCB bioavailability was observed and no significant phytotoxicity or impact to species abundance was shown. Results from experimental studies and field applications indicate *in situ* sequestration and immobilization treatment of hydrophobic organic compounds using either installation approach can reduce porewater concentrations and biouptake significantly, often becoming more effective over time due to progressive mass transfer.

Results from the Hunters Point, Lower Grasse River, and Upper Canal Creek Studies, as well as the other on-going pilot studies, provide valuable information about the long-term effectiveness and the physical stability of the AC and the chemical permanence of the remedy. According to Patmont et al. (2015), *in situ* treatment via AC has progressed from an innovative sediment remediation approach to a proven, reliable technology when applied correctly.

Despite these successes, there is an ongoing need to continue to build regulatory confidence and acceptance of AC amendments to remediate contaminated sediment sites, and to provide a reliable alternative to mass removal (dredging) or isolation capping. The efficiency of AC is known to be dependent on several factors including AC characteristics (particle size and pore geometry), concentration of AC applied, the steric properties of the sorbates (such as hydrophobicity, molar volume, and planarity of molecular conformation), sorption competition among different HOC, OM adsorbates (OM "fouling"), and mixing intensity (Kupryianchyk et al. 2015). *In situ* AC amendment of contaminated sediments has been demonstrated in depositional, low energy environments, where the potential for erosion and transport of the carbon amendment after placement is low. Additional research on application to sites with varying characteristics is needed (Hilber and Bucheli 2010; Ghosh et al. 2011, Kupryianchyk et al. 2015).

Recent research through Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) projects address strategies to assess the ecological recovery after *in situ* sediment treatment by AC amendment. In a three phase project at Hunters Point in San Francisco Bay, San Francisco, California, Luthy et al. (2011, 2013 and 2015) showed successful use of rapid assessment tools for measuring concentrations of PCBs in porewater, developed a biodynamic modeling approach to verify the benefit of AC treatment in sediments, and evaluated changes in risk related to loss or removal of AC after treatment.

Continued research is needed in several areas (SERDP/ESTCP 2004), including the development of novel amendments able to actively bind contaminants of concern other than HOCs, developments of efficient and low-impact delivery methods for amendments in sediments, pilot-scale studies at various hydrodynamic and ecological environments to understand where the technology is best suited, additional tools for the assessment of ecosystem recovery and additional full-scale demonstrations to extend knowledge gained from small-scale pilot studies (Ghosh et al 2011, SERDP 2004). Building on the previous successes of the projects discussed above, this project addressed several of research needs, and evaluated the application of the technology under new conditions, and assessed the ability to reduce bioavailable concentrations thereby reducing ecological and human health risks.

2.1.4 AquaGate Composite Aggregate Technology

The goal of the reactive amendment technology for *in situ* remediation of contaminated sediments at Pier 7 at PSNS was to reduce bioavailability by introducing a small amount of a chemical sorbent to the contaminated surface sediment. The composition of the sorbent was selected based on the nature of sediment contamination and the extent to which amendments are required to achieve specific remedial strategies.

Among the large number of amendments tested, AC has shown promising results in laboratory treatability studies and at pilot-scale for reducing the bioavailability of HOCs such as PCBs in sediment. However, all forms of AC (powdered and granular) have a very low specific gravity and bulk density, and readily floats in fresh and saline waters. This property limits the ability for AC to be applied via direct placement in underwater environments because AC added directly to the water column may not settle to the sediment bed and instead is likely to remain floating or suspended in the water column, preventing reliable or uniform application in the target placement area.

A range of approaches for applying AC to underwater sediments have been developed and demonstrated at a pilot scale. For this project, it was desired PAC be applied to take advantage of the performance benefit of PAC over granular forms of AC. One of the technologies considered to have significant potential for flexible, low cost application of PAC was developed by AquaBlok, Ltd. (AquaBlok).

AquaBlok initially applied its composite particle technology to the delivery of a bentonite-based material to form a low-permeability layer over contaminated sediments. This technology has been successfully evaluated under the USEPA Superfund Innovative Technology Evaluation (SITE) program and installed at over 100 sites to contain the migration of contamination in sediments or soils. In 2007, AquaBlok began working both in Norway and the United States to adapt its technology for the delivery of PAC through the water. This product is called AquaGate+PAC™ (AquaGate). Below is a schematic representation (Figure 2, Figure 3) of the composite particle approach employed by AquaBlok for PAC. The AquaGate composite particle is manufactured using a stone core coated with a combination of bentonite-based clay and powder AC materials (Figure 4). The PAC particles used for this AquaGate application were 74 µm in diameter or less (i.e., 95% of particles are less than 74 µm). This approach increases surface area of the thin PAC coating later (around the stone core) and provides uniform delivery/ placement of a small amount of PAC over a larger area than if AC alone were utilized.

Because the lighter powder coating materials are bound to an aggregate substrate to form the composite particle, the particle has a very high specific gravity (compared to the coating materials) and it will sink rapidly through the water.

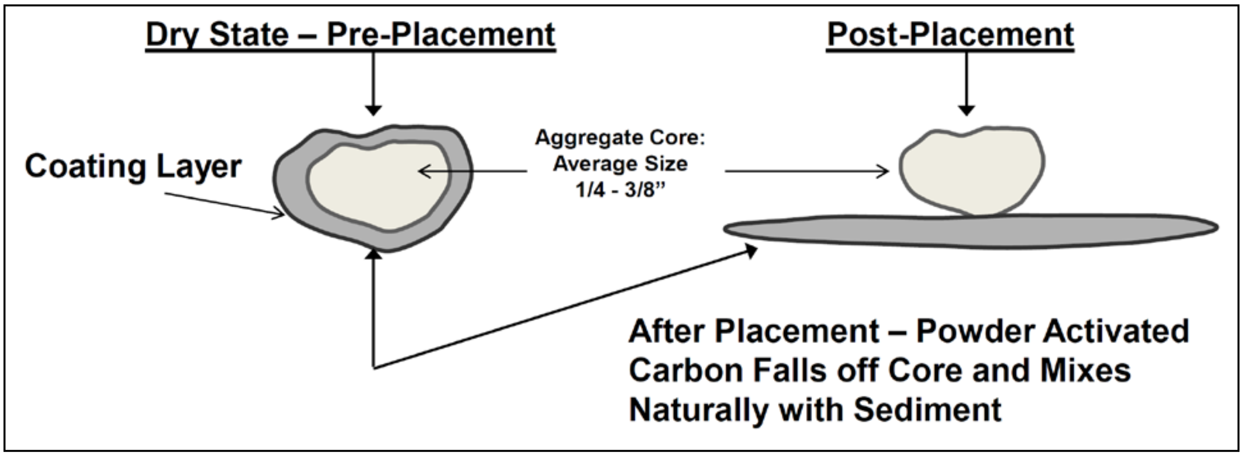

Figure 1. Composite Particle Approach (AquaGate).

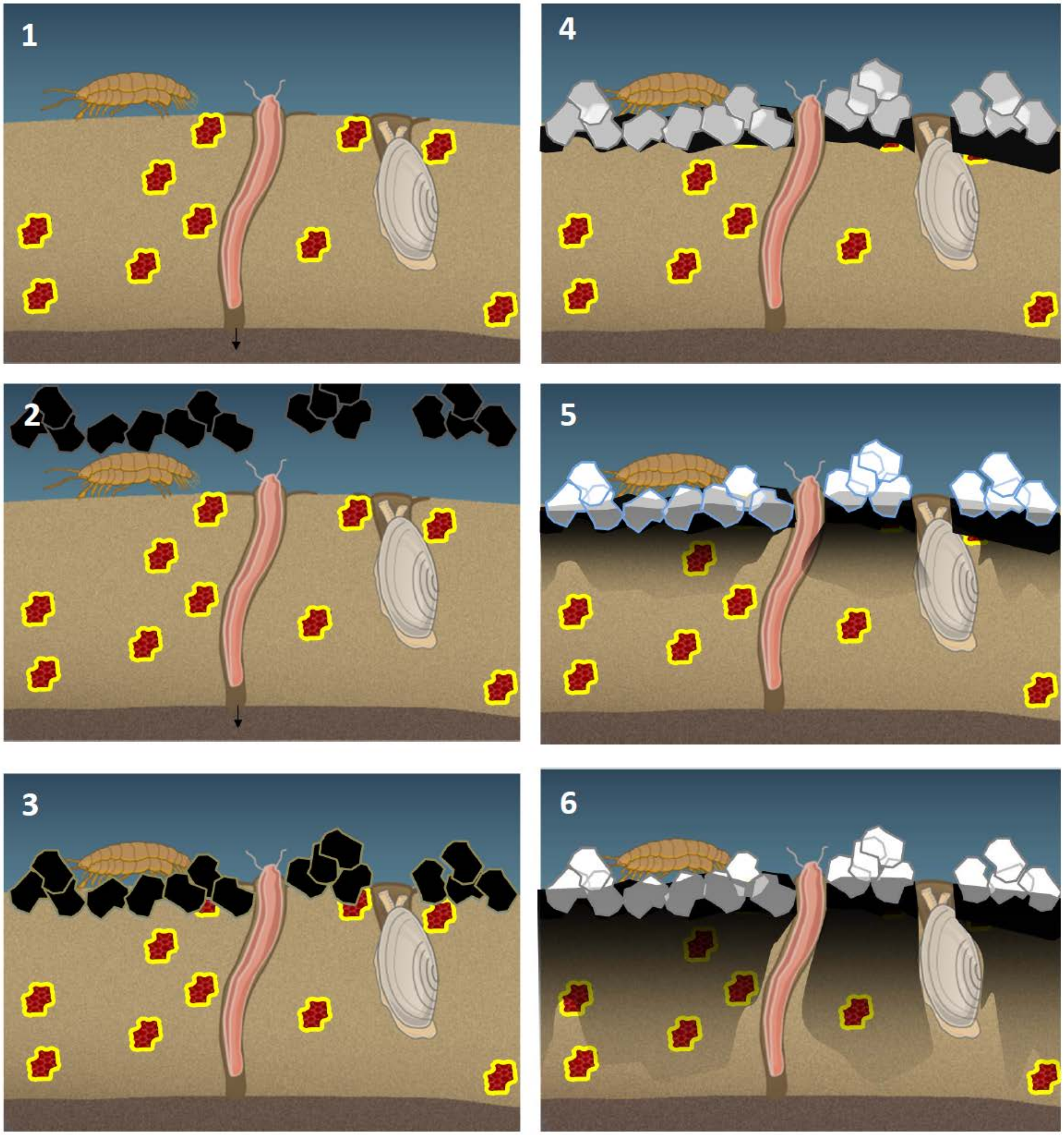

Figure 2. AquaGate Delivery, Activated Carbon Release, and Mixing in Surface Sediment Showing the Pre-Installation Conditions *(1), the gravitation descent of the amendment coated aggregate (2), the layering of the aggregate on the sediment bed (3), the release of the amendment to the sediment (4), and the gradual burial and mixing of the amendment over time (5-6).*

Figure 3. Example of AquaGate Material Delivered for Placement at Pier 7.

Note range of sizes present.

After placement, the coating materials disaggregate from the stone core and become mixed with the underlying sediment (Figure 2, Figure 3). Natural mixing (bioturbation) is expected to help incorporate the PAC material into the surface sediment layer allowing it to adsorb target contaminants, providing reduction in bioavailability over time. Because bentonite-based clay minerals are used as a component of the coating material and this material is known to have a high cation exchange and binding capacity for metals, the amendment was also evaluated for mercury (Hg) sorption capability.

The AquaGate technology was considered to be in its development phase at the time of this project because a large-scale remedial application of the material had not taken place commercially at that time. However, based on a number of research and demonstration projects supported by SERDP/ESTCP and industry, reactive sediment amendments, and specifically AC, has emerged as a well understood, innovative remediation alternative. Significant bench scale testing of AC has demonstrated its applicability for binding contaminants into matrices that reduce aqueous phase concentrations and bioavailability (Ghosh et al. 2000, Ghosh et al. 2003, Ghosh et al. 2009, Merritt et al. 2009, Millward et al. 2005, USEPA 2005, Zimmerman et al, 2004, 2005). For hydrophobic organic contaminants such as PCBs, AC has shown consistently positive results for (Magar et al. 2003, Luthy et al. 2004). Other materials, such as bentonite, have shown a degree of effectiveness for binding metals, such as mercury.

As noted previously, AquaBlok, as a technology to deliver powdered materials to sediments in the form of a coated particle, has been evaluated and demonstrated under the USEPA SITE Program (USEPA 2007) and a number of projects have been performed that have demonstrated the capability of the technology to deliver reactive amendment materials through a water column to underwater sediment. AquaGate+PAC has also been surface applied in a marsh setting under an existing ESTCP project (Menzie and Davis 2010). In addition, a form of AquaGate was applied in a deep water setting during a pilot project in Bergen, Norway in early 2010. However, this

delivery technology has not been used in the United States to place PAC in a deep water active shipyard setting.

2.1.5 Amendment Placement

2.1.5.1 Target Area and Thickness

AquaGate was placed on the sediment surface in the target application area (Figure 5) of approximately 0.5 acres. The area extends from the end of Pier 7 along the length of the pier to bollard 20 (190 feet) and extends from the middle of the width of the pier to the open berthing area adjacent to Pier 7 (115 feet). The width of the target amendment area extends 65 feet from the middle of the pier to the fender pile on the western edge (Figure 6). The area under the pier measures 190 by 50 feet (0.22 acres) and the area adjacent to the pier is 190 by 65 feet (0.28).

Target thickness of the amendment was 2 inches plus or minus 1 inch (5 – 7 cm). Thickness was expected to vary throughout the placement area due to factors such as access and equipment limitations. Material was placed in both a deep water area alongside a pier (open water berthing area) and under the pier, where significant debris and structures provide a challenge for uniform placement. The placement addressed challenges for both uniformity of placement as well as the ongoing stability of the amendment.

The target thickness was based on placement of 141 tons of AquaGate (21,850 square foot [sq. ft.] area divided by AquaGate volume of 3,318 cubic feet [ft3]; based on density of 85 pounds per ft3). This amount of AquaGate was determined based the need for placement of 7.1 tons of AC (AquaGate is 5% AC). This was the amount of AC needed to achieve the necessary increase in total organic carbon (TOC) and BC content, based on an assumed mixing depth of 10 cm and 20 cm, an increase in AC content in the top 10 centimeters (cm) of the sediment of 4.1% and 2.1% by mass, respectively. An increase in TOC and BC content by 2.1 to 4.1% was determined to be desirable based on studies showing AC at contents ranging from 1-5% as effective at reducing concentrations of total PCBs in porewater by 70-99% (Hale and Werner 2010, Sun and Ghosh 2008, Ghosh et al. 2011, Janssen et al. 2011). Placement parameters are summarized in Table 2.

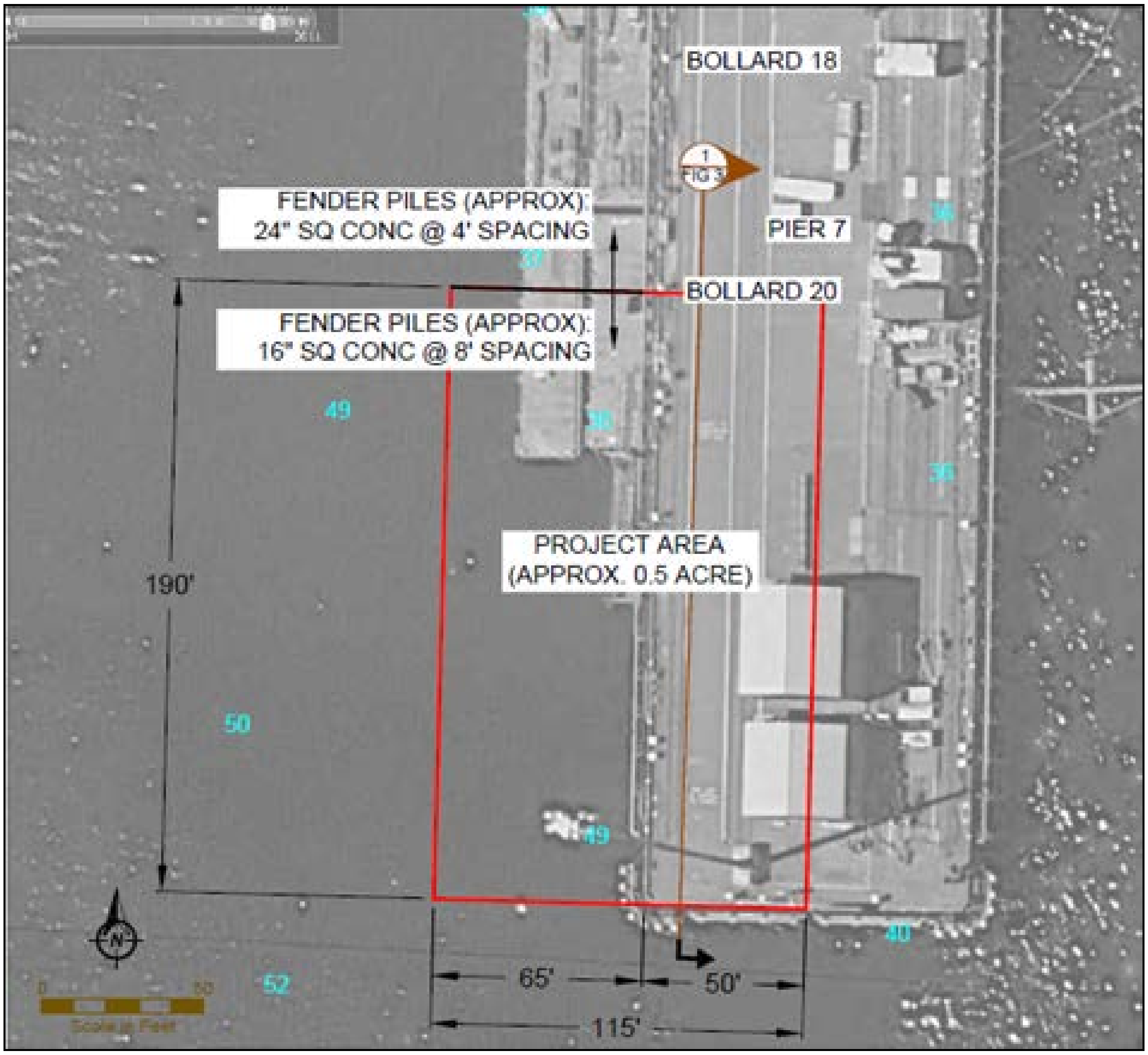

Figure 4. Target Amendment Area Adjacent To and Under Pier 7.

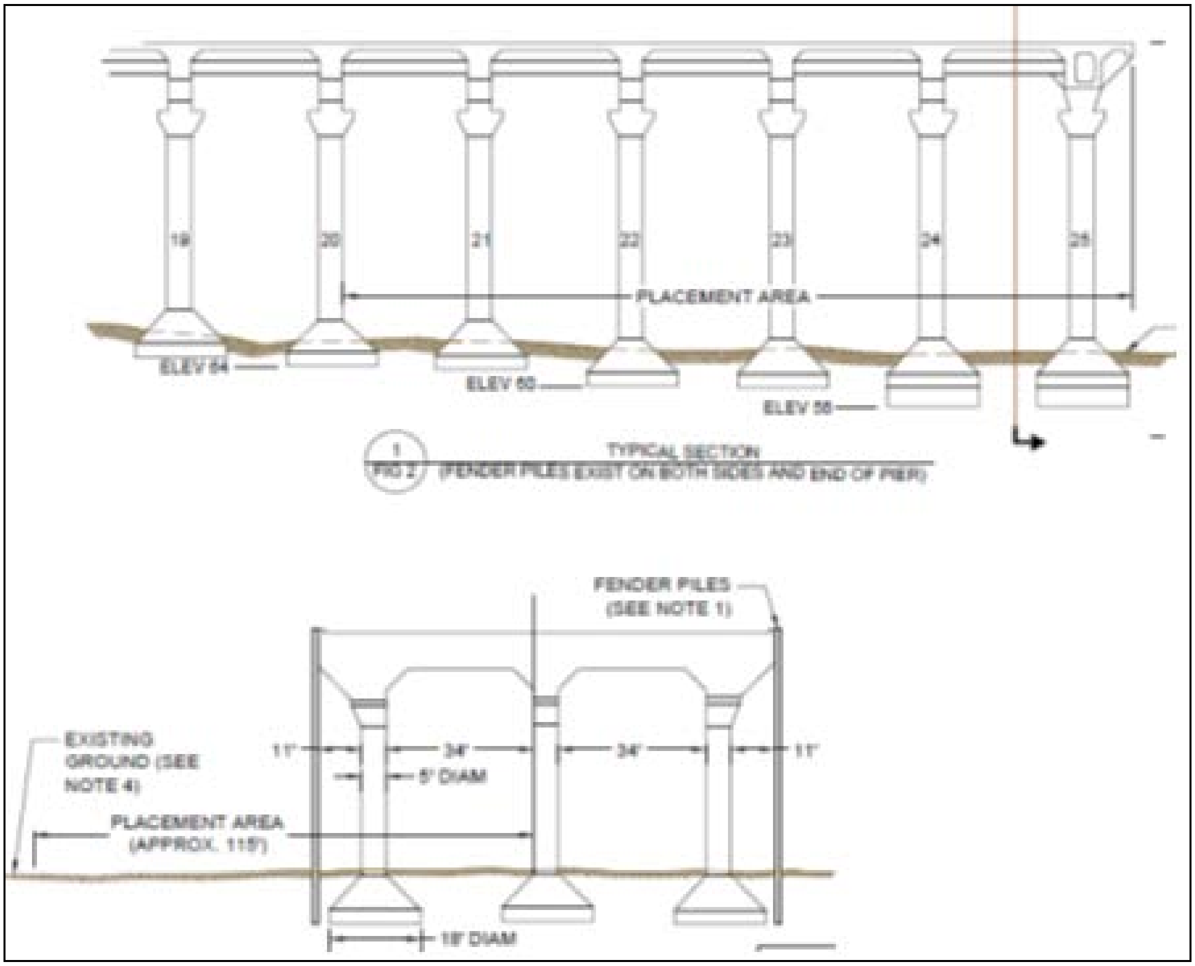

Figure 5. Cross Section of Target Amendment Area at Pier 7.

Table 1. AquaGate Amendment Placement Parameters.

Placement Parameter	Value	Unit
Length of Target Area	190	feet
	57.9	meters
Width of Target Area	115	feet
	35.1	meters
Area of Target Area	21,850	square feet
	2,029	square meters
Mass of AquaGate	141	tons
	127,913	kilograms
AC Content of AquaGate	5%	%
Mass of AC	7.1	tons
	6,441	kilograms
Areal Amendment Density	12.9	pounds per square foot
	63.1	kilograms per square meter
Areal Carbon Density	0.65	pounds per square foot
	3.16	kilograms per square meter
Bulk Amendment Density (Dry)	85.0	pounds per cubic foot
	1.4	grams per cubic centimeter
Sediment Bulk Density (Wet)	74.8	pounds per cubic foot
	4.6	grams per cubic centimeter
Sediment Percent Moisture	57%	%
Sediment Bulk Density (Dry)	47.6	pounds per cubic foot
	0.8	grams per cubic centimeter
Volume of AquaGate Placement	3,318	cubic feet
	94	cubic meters
Thickness of AquaGate Placement	1.8	inches
	4.6	centimeter
Increase in AC Content in Sediment with Mixing Depth at 10 cm (Low)	3.9	inches
	10	centimeter
	4.1%	% by mass
Increase in AC Content in Sediment with Mixing Depth at 20 cm (High)	7.9	inches
	20	centimeter
	2.1%	% by mass

2.1.5.2 Installation Equipment

The AquaGate material is a coated aggregate particle of approximately 3/8 inch in size which can be handled and applied using many of the same technologies used for placing materials such as sand or gravel. There are numerous proven and available methods for the placement of granular materials within the marine environment. The specific equipment viability for any given project is determined by the actual site conditions and requirements where the materials will be placed and the properties of the material to be placed. Site conditions and requirements considered in material placement equipment selection include:

- Site access including ability of heavy equipment to access site, access from land or water, location of pilings or other structures that interfere with placement
- Overhead obstructions such as utilities, piers, bridges or other structures

- Water depths
- Tidal Change
- Current velocities
- Accuracy and precision of placement including allowable variability in placement

A range of conventional installation and application methods have demonstrated the ability of placing thin uniform layers of dry granular materials through a water column to surface sediments. Many of these have been used to place various AquaBlok products during full-scale installations. Examples of these methods include belt conveyors, aggregate stone slinger type systems, clam-shell buckets from a conventional derrick, and excavators. Due to the physical setting at the site at Pier 7, it was determined broadcast application with conveyor belt-type (Telebelt) equipment was the most suitable option for rapid, relatively uniform placement (Figure 7).

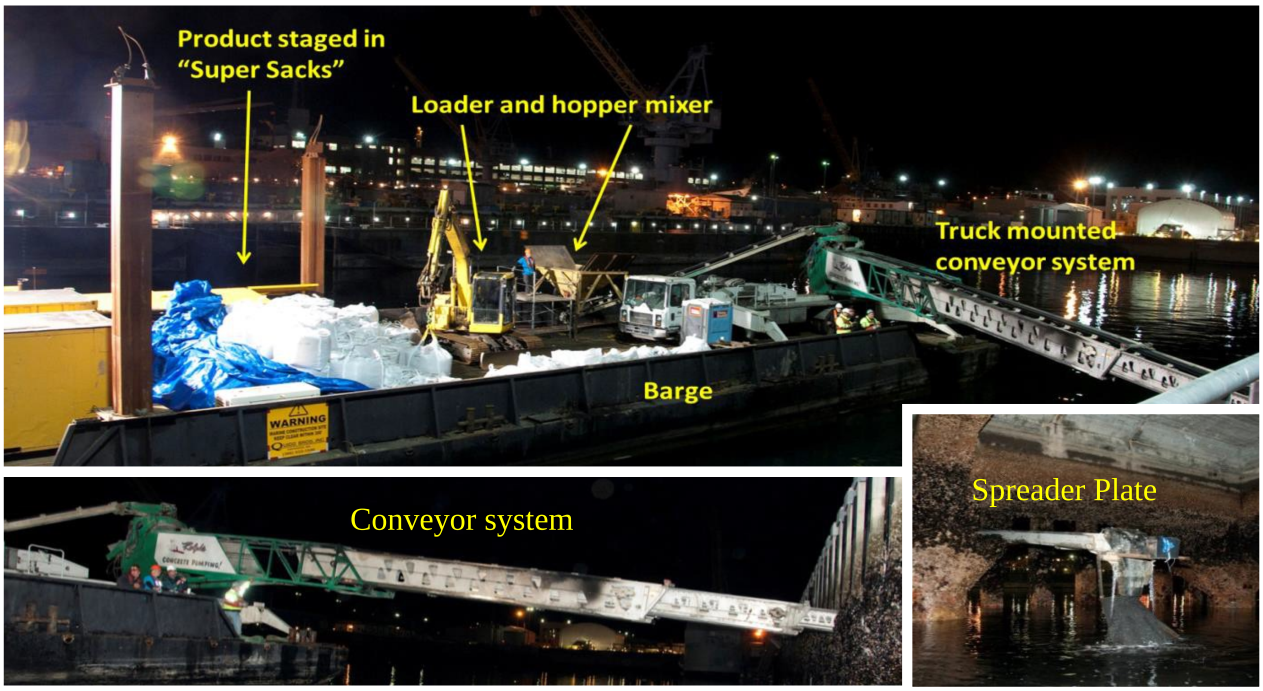

Figure 6. Amendment Application Method at Pier 7 Showing Barge Staged with "Super Sacks" of Product That Were Loaded into the Hopper Mixing Prior to Deployment with a Truck Mounted Conveyor System That Distributed the Product in the Berthing and Under Pier Areas. (PSNS&IMF Photo, approved for release; distribution is unlimited).

Broadcast application with conveyor belt-type equipment has the ability to place the material both in the open access berth area and under the pier, as allowed by access to the under-pier area based on access between existing pilings (Figure 8). Various application methods were considered for this specific project including various mechanical methods such as clamshell bucket of conveyor, hydraulic placement and pneumatic placement. Technologies that would readily work in the berth area, such as a conventional clamshell and derrick, would not be viable in the under-pier area. Hydraulic placement methods were considered, and could have been adapted to both the berth and

under-pier areas, but hydraulic placement is not compatible with current formulations of the amendment material. Pneumatic placement methods were also considered and could have been adapted to both the berth and under-pier areas, but pneumatic placement had the potential to generate dust and could have resulted in a loss of AC from the AquaGate delivery system.

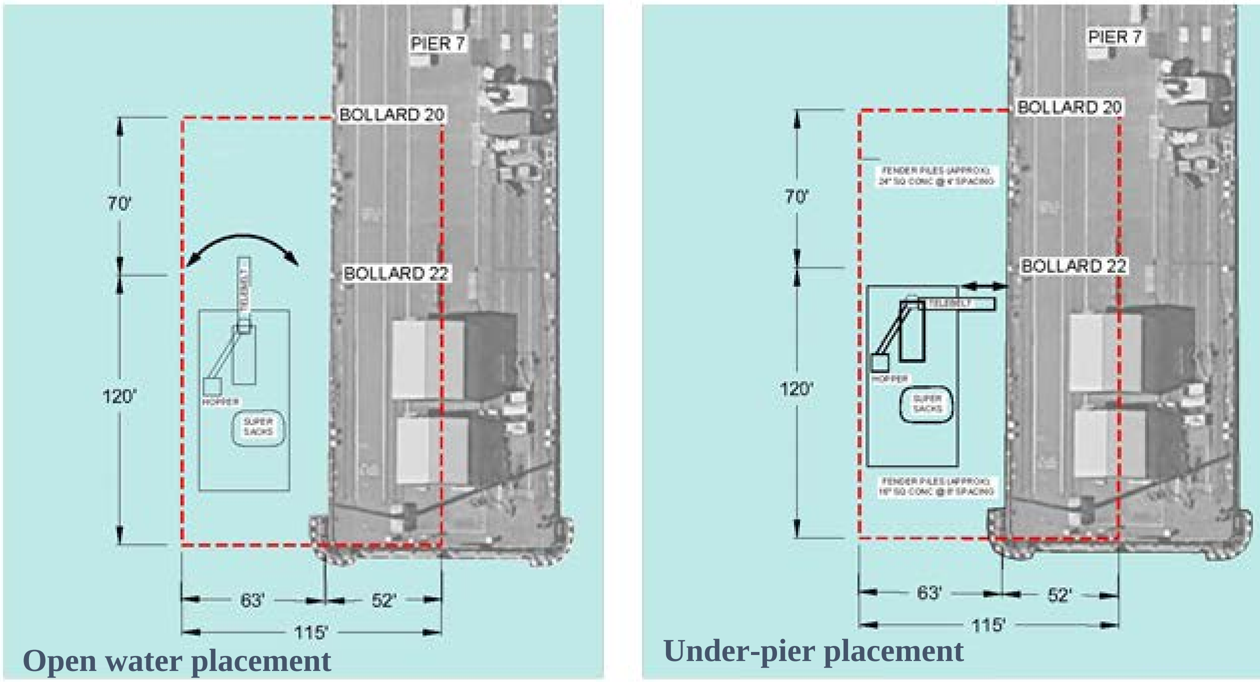

Figure 7. AquaGate Amendment Placement Approaches with the Telebelt System Including Open-berth Method (Left), and Under-pier Method (Right).

The application was conducted with a barge staged with "Super Sacks" of product that were loaded into the hopper mixing prior to deployment with a truck mounted conveyor system that distributed the product in the berthing and under pier areas (Figure 7). All equipment and material was delivered to the Pier 7 installation location by barge and tug. Supervision and support personnel were located on the pier and all installation and placement quality control efforts were performed from the barge and tug.

2.1.5.3 Placement

Placement within the berth area required securing a work outage for the area as well as temporary relocation of existing floating docks and associated gangways located within the placement area. These structures service the ongoing recycling of decommissioned submarines within the berth area, prior to the submarines being moved into dry dock. The submarines are periodically berthed along the pier over the placement area and outage was secured to assure that the Pier area was clear of vessels, resting barges, and brows along the pier during amendment installation.

On October 15, 2012, both the tug Margaret Mary and barge Aberdeen arrived on site at Pier 7. Amendment placement commenced at 20:00 on October 16 and the contractor worked 10-12 hour shifts through the nights of October 16-17 to take advantage of the favorable tides and weather.

Low tide conditions were required to allow the extension of the telebelt conveyor underneath Pier 7. Operating primarily at night under the pier presented a challenge. In addition, it should be noted that the relatively small footprint of the pilot area did not allow the equipment operator the benefit of additional time to gain experience or refine the placement approach. It is believed both coverage and uniformity of AquaGate placement would improve in any form of full-scale application. The product was placed in both open berthing and under pier areas from the tug-operated, moored barge containing the staged product packaged in the "Super Sacks," a backhoe loader moved each bag to a hopper feeder, and a truck-mounted conveyor belt-type (telebelt) broadcast conveyor system (Figure 7).

The broadcast application obtained a rapid, relatively uniform placement of about 141 tons of product over the target area. The equipment was able to place the product both in the open access berthing area and under the pier by accessing the under pier areas between existing pilings during low tide. Measurements of the amendment thickness were made during the installation by placing a 5 gallon bucket on the seafloor next to the pier and capturing the product as the conveyor distributed the product along the pier. Approximately 2 to 4 inches of the product were captured in the bucket from the single pass used to distribute the product. Once the barge was moored in the desired position, distribution of the product occurred relatively quickly, resulting in cycle-time of about 3 minutes per sack to distribute the product. This placement rate equates to 30,080 sq. ft. (seven-tenths of an acre) per eight hour day.

On the morning of October 19, the PSNS & IMF divers were on site to observe placement of the final two sacks during daylight hours. Diver observations of product delivery showed the small pebbles were resistant to the current velocities and sank slowly to the bottom settling on the existing bottom substrate, without any untoward impact to sea life on the bottom, such as sea anemones, sea stars, crabs, and flat fish. No turbidity plumes associated with the placement were observed.

2.2 ADVANTAGES AND LIMITATIONS OF THE TECHNOLOGY IN COMPARISON WITH ALTERNATIVES

The principal strategies used for managing contaminated sediment include dredging, *in situ* capping, MNR, and *in situ* treatment. Dredging removes contaminated sediment from a water body. Capping refers to the placement of a subaqueous covering or cap of clean material over contaminated sediment that remains in place as a means of isolation and/or stabilization. MNR is a remedy that typically uses ongoing, naturally occurring processes to contain, destroy, or reduce the bioavailability or toxicity of contaminants in sediment. *In situ* treatment is an approach that involves the biological, chemical, or physical amendment of contaminated sediment in place and includes sequestration (bioavailability reduction as is the case for AquaGate amendment technology). Each remedial strategy has its advantages and limitations. The selection of the most appropriate strategy, or combination of strategies, requires balancing several criteria for remedial selection which includes long-term effectiveness, permanence, and cost as well as reduction of toxicity or mobility through treatment (USEPA 2005).

The DoD faces increasing demands to address contaminated sediment sites, particularly for active harbor areas and relatively deep waters. *In situ* treatment such as sequestration (e.g., AquaGate) has been demonstrated to reduce the bioavailability of HOCs in place. AquaGate amendment has

several key advantages over dredging as a remedial option in this setting due to its ability to remediate around piers and infrastructure (e.g., piers, bridges, docks, bulkheads, or pilings), overhead restrictions, and narrow channel widths. The technology would be more preferred as a remedy than capping due to constraints on water depths for berthing and navigational purposes. *In situ* treatment, compared to dredging or capping in general, also minimizes the impact on existing habitat shortening the length of recovery (Gosh et al. 2011). This is of particular benefit in settings where it may not be possible to achieve sediment deposition at a rate that would increase the time to meet MNR recovery goals.

Another benefit of the technology is that it can be installed with conventional equipment which most settings can accommodate due to ease of maneuverability and portability and the ability to deploy within an active Naval Shipyard. Site access and logistics would not be as large of an issue as is generally encountered during dredging. Unless low cost, readily available disposal is available, sequestration will be less expensive than dredging due to the absence of transport, staging, sediment treatment (where applicable), and disposal of dredging sediment. Furthermore, additional cost to treat effluent prior to discharge to an appropriate receiving water body from dewatered sediment is frequently encountered for dredging. There may be scenarios where dredging is less expensive, such as sites with shallow contamination (less volume of dredged material) and especially if low contaminant levels enable ocean disposal. Costs associated with capping are comparable to sequestration, although the capping material may be less expensive, generally the volume of material placed is much larger. Sequestration has the ability to reduce exposure to contaminants in a comparable timeframe to capping and dredging (where dredging residuals are low) and would likely be a faster option to achieve a remedial action objective than MNR. Furthermore, sequestration treatments such as AquaGate have the benefit of being able to be applied in combination with other remedial alternatives such as capping or dredging, and also when armoring is needed.

There remains some uncertainty as to the long term effectiveness of sequestration treatment in the field. It is believed that further research is needed. Since the initiation of this project, the application of sequestration at full-scale has been performed successfully, but long term monitoring data is not yet available. Because of public perception and a predisposition by the regulatory community, dredging continues to be the most common and accepted means of sediment remediation.

Any remedy that leaves untreated contaminants in place, such as *in situ* sequestration, may have the potential for risk of re-exposure of the contaminants. A similar risk would be encountered for sites utilizing MNR, capping, or dredging with high concentrations in residuals left in place. However, the risk from potential effects of re-exposure may be less if low concentrations of contaminants remain in the sediment. Furthermore, sequestration may be limited in its ability to deliver needed amendments to deeply buried contamination, particularly in deep water environments where the bioturbation is the primary mechanism for mixing.

Effects to the benthic community have the potential to be observed from sequestration. Adverse effects have been observed in approximately 20% of the laboratory studies of individual species with 2-5% AC by weight (Rakowska et al. 2012, Janssen and Beckingham 2013). These adverse effects may be due to affinity of AC to sorb lipids, carbohydrates, proteins, and nutrients;

impairment of digestion from amendment; and/or degradation of habitat quality. Field studies of benthic community health have found no or mild effects on diversity and abundance at low doses of AC amendments. The response of the benthic community is thought to be amendment-, community-, and site-dependent. In a review by Janssen and Beckingham (2013), 2 of 4 field studies with 1 to 17% AC observed adverse effects, although it should be noted one study which found adverse effects, the effects were limited to specific species while the diversity and total abundance of the community made a full recovery and another study which found adverse effects observed at a high dose of AC (a 2-5 millimeter [mm] layer cap of PAC or PAC and clay/sand). However, it is also important to recognize dredging and capping as forms of remediation also have the potential to impact the benthic community, as these remedies remove or bury the existing benthic community, necessitating recolonization. In the case of capping, the cap material may influence a change in community composition.

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3.0 PERFORMANCE OBJECTIVES

The objective of this project was to demonstrate and validate placement, stability and performance of reactive amendments for *in situ* treatment of contaminated sediments in active DoD harbor settings. The demonstrated technology incorporated a combination of a reactive amendment, a conventional delivery system, and a suite of robust monitoring techniques for assessing delivery and stability for placed materials, effectiveness in reducing bioavailability, and potential changes to the benthic community.

This project was a field demonstration designed to assess the performance and effectiveness of the application of a reactive amendment (AquaGate) to an active DoD, deep-water harbor site at Pier 7 (PSNS & IMF, Bremerton, Washington). Elevated surface sediment concentrations of PCBs and mercury were the CoCs. Following a successful laboratory treatability study conducted with sediments from the site, the field demonstration was designed to provide baseline (2 months prior to amendment placement) and post-placement monitoring at 0.5, 3, 10, 21 and 33 months after placement of the reactive amendment. The POs are provided in Table 2. The evaluation was based on data collected during the laboratory treatability study (PO1, Kirtay et al. 2012) and data collected during pre- and post-placement monitoring events (PO2-PO6). Additional details regarding the design of this study, data requirements, and statistical analyses are provided in Section 5 (Test Design).

Demonstration and validation focused on: (1) design and selection of the amendment, (2) placement and physical stability of the reactive amendment in deeper water areas that support vessel traffic, (3) effectiveness of the amendment in reducing contaminant bioavailability over time and (4) quantification of changes to benthic habitat and benthic community structure. These demonstration and validation criteria form the basis of the POs for this project. Data collected in support of these POs provided multiple lines of evidence for assessing the effectiveness of amendment placement as an *in situ* strategy for reducing chemical bioavailability at contaminated sediment sites.

Table 2. Performance Objectives for the Project.

Performance Objective	Data Requirement	Success Criteria	Results
Quantitative Performance Objectives			
(1.) * Verify amendment performance in the laboratory.	Bioaccumulation results for *Neanthes arenaceodentata* compared to control exposed to site sediment amended under a range of mixing conditions.	• Reduction in biouptake of target CoC (PCBs) in treatment compared to controls. • Target > 50% reduction in PCBs. • Hg and MeHg measured for tracking purposes only.	Met (Met for 24-hr mix and 1-month mix which were most similar to field conditions)

Table 2. Performance Objectives for the Project (Continued)

Performance Objective	Data Requirement	Success Criteria	Results
(2.) Demonstrate amendment associated reduction in contaminant bioavailability in the field.	SEA Ring deployments to measure *in situ*: • Bioaccumulation in polychaete and bivalve tissues. • Porewater concentrations with passive samplers.	• Significant reduction (>50%) in bioaccumulation of PCBs compared to baseline. • Hg and MeHg measured for tracking purposes only.	Met (Met for PCBs)
(3.) Demonstrate reduction in contaminant bioavailability is sustained over time.	SEA Ring deployments to measure *in situ*: • Bioaccumulation in polychaete and bivalve tissues. • Porewater concentrations with passive samplers.	• Reduction in bioaccumulation compared to baseline is sustained greater than 2 years. • Hg and MeHg measured for tracking. purposes only. Same success criteria as Performance Objective 2.	Met (Met for PCBs)
Qualitative Performance Objectives			
(4.) * Demonstrate detectability of amendment using SPI visual monitoring methods in the lab.	Lab SPI images of control, no mix layer, and 2 mixed layers.	• Amendment was qualitatively distinguishable from native sediment in SPI images.	Met
(5.) Demonstrate uniform deep water placement to target area.	SPI images; TOC and BC analysis of sediment cores.	• Amendment evenly distributed at target thickness (~2±1 in). • 2.1 - 4.1% increase in TOC and BC content in surface sediments. • Within ~90% of the target area as indicated by SPI surveys.	Met (Met for SPI, visual analysis of cores, diver survey, and TOC)
(6.) Demonstrate amendment physical stability over time.	SPI images; TOC and BC analysis of sediment cores.	• Amendment remains evenly distributed laterally while mixing vertically over time. • Same success criteria as PO 5.	Met (Met for SPI, visual analysis of cores, TOC in 10-, 21- and 33-month events, BC in 3-, 10-, and 21-month events)
(7.) Evaluate benthic community changes in response to amendment.	Benthic community census data.	No or minimal adverse impact in benthic community ecological health metrics.	Met

*Objective performed as part of a laboratory study prior to field demonstration.

**The POs were demonstrated with monitoring tools including the Sediment Ecotoxicity Assessment Ring (SEA Ring), Sediment Profile Imaging (SPI) system, benthic community analysis, and measurements of total organic carbon (TOC), black carbon (BC), and CoC concentrations in sediments, tissues, and passive samplers.

3.1 QUANTITATIVE PERFORMANCE OBJECTIVES

3.1.1 Verify Amendment Performance in the Laboratory (PO1)

3.1.1.1 Description

The effectiveness of the technology for contaminated sediment remediation is a function of the degree to which the target contaminants were sequestered by the reactive amendment and contaminant bioavailability to benthic organisms was decreased. The potential for success in remediating the test area depends on an initial laboratory demonstration of the reduction in bioaccumulation of PCBs, the target CoC by benthic organisms in treatment versus controls. Mercury and methylmercury are CoCs of secondary interest and were tracked as well. This was performed prior to placement of the amendment in a laboratory setting.

3.1.1.2 Data Collection

The effectiveness of the amendment was evaluated on the basis of reduction in bioaccumulation of PCBs in the benthic marine polychaete, *Neanthes arenaceodentata*. Data collected for the assessment included bioaccumulation data from a control sediment, unamended sediment (Pier 7), and three sediment treatments representing differing degrees of mixing (i.e. contact time) with the reactive amendment (AquaGate), including no mix, 24-hour mix, and 1-month mix treatments. Tissue samples were collected from each treatment and analyzed for PCBs. Results from 28-day laboratory exposures were used to determine the percent reduction of concentration of total PCBs in *N. arenaceodentata* tissue in each of the three treatments relative to concurrently evaluated tissues from unamended sediment.

3.1.1.3 Interpretation of Data and Extent the Success Criteria Were Met

The objective was considered to be met if there was a significant reduction (at least 50%) in bioaccumulation of target CoC (PCBs) in the amended sediments versus the unamended sediment and control sediment. The 24-hour mix and 1-month mix had a percent reduction of greater than 50%. For the no mix treatment, a 44% reduction was observed on both wet weight (ww) and lipid normalized basis; however, no mix conditions are unlikely to be encountered in the field at the Site.

3.1.2 Demonstrate Reduction in Contaminant Bioavailability in the Field over Short Term (PO2)

3.1.2.1 Description

The effectiveness of the technology for contaminated sediment remediation was a function of the degree to which the target contaminants were sequestered by the reactive amendment and contaminant bioavailability to benthic organisms was decreased. The success in remediating the test area depended on the demonstration of the reduction in bioaccumulation of the target CoC (PCBs) in the field. The extent to which the amendment contributed to the reduction in bioavailability and bioaccumulation to the benthic invertebrate community was evaluated. Mercury and methylmercury are CoCs of secondary interest and were tracked as well.

3.1.2.2 Data Collection

The effectiveness of the amendment was evaluated on the basis of reduction in bioaccumulation of PCBs in benthic organisms and reduction in concentrations of PCBs in sediment porewater. The tools to evaluate the change in bioavailability and bioaccumulation included measurement of sediment porewater concentrations using solid phase microextraction (SPME) methods. Porewater concentrations are a primary measure of the bioavailable chemical fraction in sediments. PCB concentrations in benthic invertebrates were measured *in situ* using the Sediment Ecotoxicity Assessment Ring (SEA Ring) with *Nephtys caecoides* (polychaete) and *Macoma nasuta* (bent-nosed clam), both of which are relevant due to presence in Puget Sound. Concentrations in sediment porewater and tissue were measured both pre- and post-amendment placement (10-, 21-, and 33-months after amendment placement. Total mercury and methylmercury were measured in organism tissues.

3.1.2.3 Interpretation of Data and Extent the Success Criteria Were Met

Success was evaluated based on measured reductions in PCB bioaccumulation in benthic invertebrates and supporting evidence of reduced porewater concentrations. The objective was considered to be met if a statistically significant reduction (> 50%) in bioaccumulation was measured as compared to baseline on a site-wide average. Supporting evidence from porewater measurements was used to interpret the bioaccumulation results and the effectiveness of the amendment was gauged by observation of a statistically significant reduction in porewater concentrations after the application of the amendment. Analysis of variance (ANOVA), t-tests, and non-parametric tests comparing baseline and post-amendment placement results were applied, as appropriate, to test the significance of the data.

We selected the 50% target on the basis of balancing the following factors: (1) literature that suggested reductions in the lab of 80-90%; (2) expecting that the 80-90% reductions achieved under laboratory conditions may not be achievable under less controlled field conditions at an active harbor site; (3) wanting to see a reduction that was large enough to be meaningful in terms of remediation; and (4) knowing that with limitations on the sampling design, we would need a relatively large change to be statistically significant. Because each site will have different goals for remediation and risk reduction, we didn't dwell too much on the specific value selected, but instead we focused on the actual reductions that were achieved under challenging conditions (e.g. deep water, influences from vessel traffic/prop wash, biological and abiotic debris, and pier structures) in an active DoD harbor setting that is representative of many areas that will require remediation by DoD in the future.

3.1.2.3.1 Total PCBs

Concentrations of total PCBs in *M. nasuta* tissue were reduced by greater than 50% from the baseline in the 10-, 21-, and 33-month monitoring events (average reduction of 68%, 82%, and 88% on a lipid weight [lw] basis, respectively), with statistically significant reductions in the 21- and 33-month events.

Concentrations of total PCBs in *N. caecoides* tissue were significantly reduced from the baseline in the 10-, 21-, and 33-month monitoring events (average reduction of 87%, 89%, and 97% on lw basis, respectively).

Concentrations of total PCBs freely dissolved in sediment porewater were significantly reduced from the baseline to the 10-, 21-, and 33-month events (average reduction of 75%, 86%, and 81%, respectively).

Concentrations of total PCBs in sediment normalized for TOC content and corrected for debris were significantly reduced from the baseline in the 21-month event (on average 64% and 40% lower, respectively). In the 10- and 33-month events, reductions from the baseline were not significant (average 35% lower). Concentrations of total PCBs in sediment were not expected to decrease. While the cause of this decrease is not fully understood, along with the observations from the treatability study, there is evidence in the literature that concentrations of both PCBs and PAHs are lower in sediments treated with powdered AC as compared to the unamended sediments (Kupryianchyk et al. 2013). This could be explained by a decrease in the ability to extract the PCBs from the sediments treated with the AC due to binding of PCBs to the carbon particles.

3.1.2.3.2 Total Mercury

Concentrations of total mercury in *M. nasuta* tissue were not reduced by greater than 50% from the baseline in the 10-, 21-, and 33-month monitoring events (average of 4%, 27%, and 41% decrease, respectively), with a statistically significant difference in concentrations from the baseline to the 33-month event.

Concentrations of total mercury in *N. caecoides* tissue were not reduced by greater than 50% from the baseline in the 10- and 33-month monitoring event with a significant increase of 225% and decrease of 24%, respectively. A significant reduction of greater than 50% was observed in the 21-month event, with an average reduction of 66%.

Concentrations of total mercury in sediment corrected for debris were significantly reduced from the baseline in the 10- and 21-month monitoring events (average of 57% and 65% decreases, respectively). The cause of the decrease is not fully understood since concentrations in sediment are not expected to be decreased as a consequence of the amendment; however, it may be due in part to the presence of shell hash and aggregate present in samples from the 10- and 21-month events. The debris content for the samples submitted for PCB analysis were assumed to be the same for the Hg samples, however, heterogeneous nature of site, specifically concerning the presence of shell hash, cobble, and the amendment aggregate contributed to the uncertainty of the results.

3.1.2.3.3 Methylmercury

Concentrations of methylmercury in *M. nasuta* tissue were not reduced by greater than 50% from the baseline in the 10-month event, with an average decrease of 23%. Significant decreases were observed in the 21- and 33-month events (average reduction of 71% and 53%, respectively). No statistically significant difference was observed from the baseline to the 10-month event.

Concentrations of methylmercury in *N. caecoides* tissue were reduced by equal to or greater than 50% from the baseline in the 10-, 21-, and 33-month monitoring events (average decreases of 68%, 92% and 70%, respectively), with statistically significant reductions in the 21- and 33-month events.

Concentrations of methylmercury in sediment corrected for debris were significantly increased from the baseline in the 10- and 21-month monitoring events (average of 149% and 822% higher, respectively). However, there were reductions in concentrations of methylmercury in *M. nasuta* and *N. caecoides* tissue in the 10- and 21-month events, although not a statistically significant difference in the 10-month.

3.1.3 Demonstrate Reduction in Contaminant Bioavailability is Sustained over Time (PO3)

3.1.3.1 Description

The effectiveness of the technology for contaminated sediment remediation was a function of the degree to which the target contaminants were sequestered by the reactive amendment and contaminant bioavailability to benthic organisms was decreased and sustained over time. The success in remediating the test area depended on the demonstration of the reduction in bioaccumulation of the target CoC (PCBs) in the field. The contribution of the amendment to the reduction in bioavailability and bioaccumulation to the benthic invertebrate community and an evaluation to the extent to which the AC remains effective in sorbing HOCs for greater than 2 years following the initial application of the amendment in the field (33-month post-amendment placement monitoring event). Mercury and methylmercury were also tracked as CoCs of secondary interest.

3.1.3.2 Data Collection

The effectiveness of the amendment was evaluated on the basis of reduction in bioaccumulation of PCBs in benthic organisms and in sediment porewater. The tools to evaluate the change in bioavailability and bioaccumulation included measurement of sediment porewater concentrations using SPME methods. Porewater concentrations are a primary measure of the bioavailable chemical fraction in sediments. PCB concentrations in benthic invertebrates were also measured *in situ* using the SEA Ring with *Nephtys caecoides* and *Macoma nasuta*. Concentrations in sediment porewater and tissue were measured both pre- and post-amendment placement.

3.1.3.3 Interpretation of Data and Extent the Success Criteria Were Met

The objective was considered to be met if a significant reduction in bioaccumulation compared to baseline is sustained beyond the two year monitoring period. ANOVA, t-tests, and non-parametric tests comparing baseline, post-amendment placement, and long-term monitoring results were applied as appropriate to test the significance of the data.

3.1.3.3.1 Total PCBs

Concentrations of total PCBs in *M. nasuta* tissue were significantly reduced by greater than 50% from the baseline in the 33-month monitoring event (average reduction of 88% on lw basis).

Concentrations of total PCBs in *N. caecoides* tissue were significantly reduced from the baseline in the 33-month monitoring event (average reduction of 97% on lw basis).

Concentrations of total PCBs freely dissolved in sediment porewater were significantly reduced from the baseline to 33-month event (average reduction 81% decrease).

Concentrations of total PCBs in sediment corrected for debris and OC normalized were not significantly different from the baseline to the 33-month event (average 40 % decrease).

3.1.3.3.2 Total Mercury

Concentrations of total mercury in *M. nasuta* tissue not were reduced by greater than 50% from the baseline in the 33-month monitoring event (average 41% significant decrease from baseline).

Concentrations of total mercury in *N. caecoides* tissue were not reduced by greater than 50% from the baseline in the 33-month monitoring event with no significant difference observed (average decrease of 24%).

Concentrations of total mercury in sediment corrected for debris content were not significantly different in the 33-month event compared to the baseline (average 2% increase).

3.1.3.3.3 Methylmercury

Concentrations of methylmercury in *M. nasuta* tissue were significantly reduced by greater than 50% from the baseline in the 33-month event.

Concentrations of methylmercury in *N. caecoides* tissue were significantly reduced by greater than 50% from the baseline in the 33-month monitoring event (average decrease of 70%).

Concentrations of methylmercury in sediment corrected for debris content were significantly higher in the 33-month event than the baseline (average 613% increase).

3.2 QUALITATIVE PERFORMANCE OBJECTIVES

3.2.1 Demonstrate Detectability of Amendment using SPI Visual Monitoring Methods in the Lab (PO4)

3.2.1.1 Description

The effectiveness of the sediment profile imaging (SPI) camera as a visual monitoring tool was a function of the degree to which the camera can differentiate between the native sediment and the amendment. The likelihood of demonstrating accurate placement of the amendment to the target area depends on an initial laboratory demonstration of the SPI method for visually differentiating the amendment from the sediment under different conditions.

3.2.1.2 Data Collection

Lab SPI images of four sediment treatments: 1) unamended (control) sediment, 2) sediment with an initial layer of the amendment and 3) two mixed layers (shallow and deep) were taken. The SPI images were then processed and qualitatively reviewed. SPI results were compared to BC, TOC, and visual analysis of cores to evaluate the accuracy of SPI-based amendment mixing depth estimates.

3.2.1.3 Interpretation of Data and Extent the Success Criteria Were Met

Success of the SPI camera as a visual monitoring tool was met if the amendment was qualitatively (visually) distinguishable from the native sediment in all of amended sediment treatments. The results from testing the SPI camera for as a placement/stability verification monitoring tool yielded promising results as SPI was able to distinguish the amendment from the native sediment.

3.2.2 Demonstrate Uniform Deep Water Placement to Target Footprint (PO5)

3.2.2.1 Description

SPI images were shown to be effective at distinguishing the amendment from the native sediment in a laboratory setting (Performance Objective 4), therefore SPI camera imagery surveys were conducted within and adjacent to the target amendment area prior to and after amendment placement. The baseline images were compared the SPI camera images collected immediately following placement (0.5-month event). These images, in addition to the analysis of BC and TOC contents from sediments collected by core sampling were used to evaluate the lateral and vertical changes in amendment distribution over time.

3.2.2.2 Data Collection

SPI images within and adjacent to the target amendment area were collected. Core samples within the target amendment area were visually analyzed for aggregate presence and sediment was analyzed for TOC and BC contents.

3.2.2.3 Interpretation of Data and Extent the Success Criteria Were Met

Successful placement of the amendment was based on an even distribution of the amendment at an approximate target thickness (2 ± 1 inch, 5 cm ± 2.5 cm) over the majority of the target area (~90% of the 1/2-acre target) as measured immediately following the placement. In the 0.5-month SPI survey, 80% of the target area received measurable or trace deposits of AquaGate with an average thickness of 11 cm. Also, a diver survey provided further confirmation the amendment was placed within the target area and the PAC coating was no longer on the aggregate core. Placement was qualitatively considered successful.

An increase in TOC and BC content of the surface sediments (0 to 10 cm below the sediment-water interface) of 2.1 to 4.1% was expected following amendment placement. From the baseline to the 0.5-month event, an average increase in TOC content of 50% and an average decrease in BC content of 3% were observed (average of the 0-5 cm and 5-10 cm interval depths below the sediment-water interface). It was expected that the BC content would increase and analytical issues with the measurement of BC content and high presence of shell hash in many samples may explain this observation.

In the 0.5-month event in the 0-5 cm interval depths below the sediment-water interface, there was a significant increase in TOC content from the baseline. In the 5-10 cm and 10-15 cm intervals, no significant difference interval was observed from the baseline to 0.5-month event. In the 0-5, 5-10, and 10-15 cm intervals, no significant difference in BC content was observed from baseline to

the 0.5-month monitoring event. In the 3-month monitoring event, there was no significant difference from the baseline in TOC and BC contents observed in the 0-5, 5-10, and 10-15 cm intervals. Increase in TOC content was qualitatively considered successful.

3.2.3 Demonstrate Amendment Physical Stability over Time (PO6)

3.2.3.1 Description

The effectiveness of the AC amendment was a function of the physical stability and degree of mixing of the amendment over time within the target area. Loss of AC over time would be expected to adversely impact the overall effectiveness of this technology.

3.2.3.2 Data Collection

The same methodologies and data requirements used for Performance Objective 5 were used to evaluate the physical stability and mixing of the AC over time. Monitoring information was used to estimate the coverage and depth of the amendment. Also, visual analysis of cores was conducted in the 10-, 21-, and 33-month events.

3.2.3.3 Interpretation of Data and Extent the Success Criteria Were Met

Successful distribution of the amendment was considered achieved if the AC remained evenly distributed laterally while mixing vertically over time, as shown through the SPI camera images as well as by a determination of TOC and BC in the cores. Physical stability of the amendment was considered a success if the expected 2.1 to 4.1% increase relative to the baseline characterization in TOC and BC contents were observed overtime in the 3- (TOC/BC content only), 10-, 21-, and 33-month post-amendment placement monitoring events**.**

Based on SPI surveys in the 10-, 21-, and 33-month, 82%, 67%, and 73%, respectively, of the SPI stations within the target area retained measurable or trace deposits of AquaGate with average thicknesses of 6.9 cm, 11 cm, and 8.8 cm, respectively. Approximately 75%, 65%, and 65% of the target area retained measurable or trace deposits of the amendment in the 10-, 21-, and 33-month events, respectively. Placement was qualitatively considered successful.

Visual analysis of core samples confirmed aggregate placement at 9 of the 10 multi-metric stations in the 10-month event, with an average depth of 10 cm (station 2-MM). Also aggregate placement was confirmed at 9 of the 10 multi-metric stations in the 21-month event (station 2-MM), with an average depth of 11 cm. In the 33-month, all multi-metric stations were observed to have aggregate, with an average depth of 10 cm.

In the 3-month event, a decrease in TOC content of 2% and an increase in BC content of 7% were observed in the top 10cm of sediment (average of intervals 0-5 cm and 5-10 cm below sediment-water interface) compared to the baseline. In the 10-month event on average, TOC and BC content increased by 124% and 91% compared to the baseline, respectively. TOC and BC contents in the 21-month event were higher than in the baseline by 52% and 18%, respectively, on average. In the 33-month event, TOC content was higher than baseline by 20% and BC content was 55% less on average. Increase in TOC content was qualitatively considered successful.

Based on TOC content, in the 0-5 cm interval depths below the sediment-water interface, there was a significant increase from the baseline to the 10-month event and no significant difference

from baseline to the 3-, 21-, and 33-month events. In the 5-10 cm interval, no significant difference in TOC content was observed from the baseline to all subsequent monitoring events, with the exception a significant increase observed in the 10-month event. In the 10-15 cm interval, no significant difference was observed from the baseline to all subsequent events.

Based on BC content, in the 0-5 cm depth interval below the sediment-water interface, no significant difference in BC content was observed from baseline to the subsequent monitoring events. In the 5-10 cm and 10-15 cm intervals, there was no significant difference from baseline to the subsequent monitoring events with the exception of a significant increase in the 10-month event.

3.2.4 Evaluate Benthic Community Changes in Response to Amendment (PO7)

3.2.4.1 Description

The secondary influence of the amendment on the benthic community was evaluated. Secondary effects of the amendment in altering the benthic community were tracked based on comparison to baseline and reference conditions. Although there was limited data on the magnitude and duration of effects to the benthic community from the use of AC as an amendment, it is possible AC and physical disturbance of the bottom may adversely affect the benthic invertebrate community health (Rakowska et al. 2012, Janssen and Beckingham 2013). Changes in the benthic community within the target amendment area were evaluated in response to the amendment. Benthic community census data was obtained two months prior to amendment deployment (baseline) as well as 10, 21 and 33 months after amendment deployment. Additionally, benthic infaunal succession was observed in the SPI surveys obtained two months prior to amendment placement (baseline) and 0.5-, 10-, 21-, and 33-months prior to amendment placement.

3.2.4.2 Data Collection

Data required to evaluate potential effects of the amendment on the benthic community include benthic taxonomic surveys before and after placement, and SPI camera photos to document benthic colonization. Results were used to document the effects of amendment placement on the abundance and diversity of the benthic community, and to document changes in community structure with time after amendment placement. Invertebrates were identified to the lowest possible taxonomic level and enumerated, with results used to compute comparative ecological parameters such as total abundance, taxa richness, and evenness. These comparative parameters allow for evaluation of the ecological response of the benthic invertebrate community to the reactive amendment. The SPI camera provided a qualitative examination of the benthic community and was used to assess the depth of sediment mixing via bioturbation and stage of infaunal succession.

3.2.4.3 Interpretation of Data and Extent the Success Criteria Were Met

Success focused on quantifying any changes that occurred in relationship to the placement of the amendment. Because the character of the amendment will change the substrate, changes in the benthic community were expected to some degree. However, there is very little data on the degree of the changes that occur and how long they persist. Thus success was not gauged by any specific outcome, but primarily on collecting adequate data to document the changes that may occur.

From the benthic community census results, total abundance, species diversity, taxa richness, Pielou's evenness (J'), Swartz's dominance index (SDI), and percent abundance of the five most abundant taxa were calculated. These six metrics were evaluated to compare differences from baseline to the 10-, 21-, and 33-month monitoring events at the multi-metric (amended) and reference (unamended) stations. Also, the results at the amended and unamended stations were compared within each monitoring event for each metric. Based on this evaluation, the amendment placement did not adversely affect the benthic community in the short or long term.

The SPI surveys found no difference in the percent of stations with evidence of Stage 3 taxa in the baseline, 10-month, and 21-month surveys; however, the percent of stations with Stage 3 taxa within the target area were lower in the 0.5- and 33-month surveys. While the cause of the apparent retrograde of successional stage at the berthing area in the 33-month is unknown, it may be related to physical disturbance caused by ship movement at the site. Further monitoring of the site would help understand if the retrograde was due to a temporary condition at the Site (such as organic enrichment or physical disturbance) or is sustained for a longer duration.

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4.0 SITE DESCRIPTION

4.1 SITE LOCATION AND HISTORY

The site selected for the reactive amendment demonstration was adjacent to and under the southwest end of Pier 7 at PSNS&IMF (Bremerton, WA). This project was leveraged with a field demonstration of the SEA Ring, a key component of ESTCP Project ER-201130, "Demonstration and Commercialization of the Sediment Ecosystem Assessment Protocol", Mr. Gunther Rosen, Space and Naval Warfare (SPAWAR) Systems Center Pacific (SSC Pacific). The SEA Ring was the predominant field device used in the integrated weight-of-evidence based ecological risk assessment approach. The SEA Rings played a critical role in demonstrating the efficacy of the reactive amendment addition to reduce contaminant bioavailability. The site Naval Facilities Engineering Command Northwest (NAVFAC NW) Remedial Project Managers (RPMs, formerly Mr. Dwight Leisle, Mr. Mark Wicklein, and currently Ms. Ellen Brown) expressed interest in and agreed to support the work reported herein. The specific location for the field demonstration was identified as the SW corner of Pier 7, located at the Shipyard's eastern end (Figure 8), where both PCBs and mercury are CoCs. The reactive amendment demonstration occurred over a course of about 3 years with a baseline assessment of the site 2 months prior to the placement of the amendment. Subsequent monitoring took place immediately following amendment placement (0.5-months) and at 3 months, 10 months, 21 months and 33 months to evaluate amendment placement, stability, mixing, effectiveness and impact to the benthic community.

The selected demonstration site was located at Pier 7 which is inside the Controlled Industrial Area (CIA) of the shipyard and part of the Bremerton Naval Complex (BNC). The BNC includes Naval Base Kitsap (NBK) Bremerton and PSNS & IMF and is located in the city of Bremerton, Kitsap County, Washington (Figure 8). The Navy maintains 1,350 acres of property along the shoreline of Sinclair Inlet, an arm of Puget Sound. The shoreline is an industrial waterfront, armored with quay walls and riprap, with several large piers and six dry docks.

The Pier 7 site was selected because it met the selection criteria for this project and provided a unique opportunity to evaluate the implementation of a reactive amendment at a moderately contaminated DoD sediment site on field scale within an active harbor. Factors that supported the selection of this site for demonstration and validation of the reactive amendment process included: 1) willingness of the RPM to allow a demonstration in an active shipyard environment, 2) interest by the Washington State Department of Ecology (WDOE), USEPA Region 10, and other stakeholders on the BNC Technical Advisory Committee in the reactive amendment remedial alternatives, 3) presence of existing data to characterize the nature and distribution of CoCs (e.g., PCBs and mercury) in the area, 4) an active harbor with Navy and civilian ship and tug activity, 5) pier structure as an impediment to dredging, and 6) opportunity to leverage this project with other related projects that were conducting studies at the same location. These characteristics and the strong leveraging aspect made this site particularly well suited for a reactive amendment demonstration at sites that will require monitoring following application of *in situ* remedies. ESTCP Project #ER-201130 coordinated deployment of the SEA Rings and provided leveraged resources for field personnel and other forms of cost and data sharing.

Vessel traffic during the study ranged from small recreational and commercial fishing vessels to occasional larger tug and Navy ship traffic, and regularly scheduled Washington State ferries arriving and leaving the Bremerton Ferry Terminal.

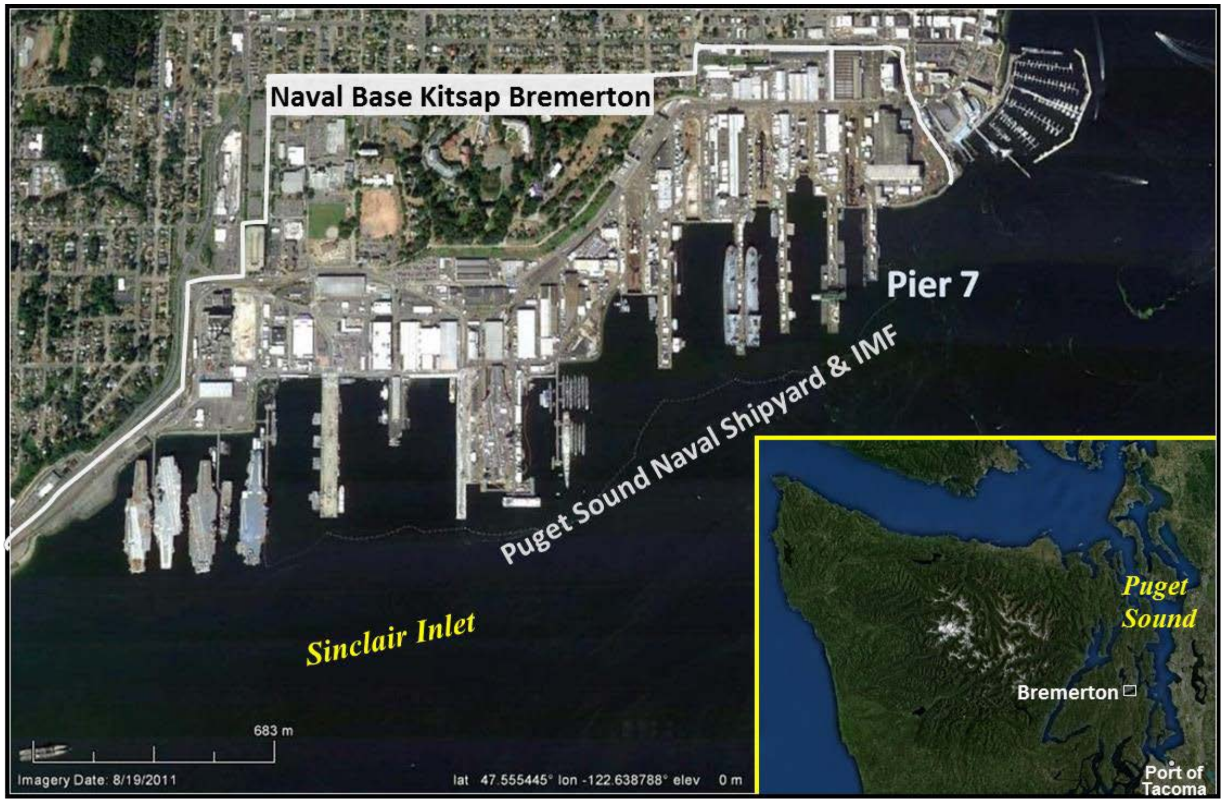


Figure 8. Site Location. Pier 7 at PSNS&IMF in Sinclair Inlet near Bremerton, WA.

4.2 SITE GEOLOGY/HYDROGEOLOGY

The BNC shoreline has been greatly modified from its original condition. Historically, the area consisted of tidelands, marshes, and high bank bluffs covered with forests. The area was cleared and filled in several stages beginning in the late 1800s to accommodate naval operations. At present, the shoreline is comprised of an industrial waterfront that is armored with quay walls and riprap, and is developed with several large piers and six dry docks. Along the quay walls, water depth drops off more or less vertically to approximately 15 to 20 feet below mean lower low water (MLLW). In rip-rapped areas, depths at the immediate shoreline are commonly less than 5 feet MLLW, but drop off steeply beyond this. Recent bathymetric survey data at BNC reveal water depths generally ranging between 40 and 45 feet, except in dredged areas near piers and vessel berthing areas where depths increase to 45 to 50 feet. Offshore of the site, water depths are generally 40 to 45 feet. Depths increase to over 120 feet a bathymetric depression located southeast of BNC in the entrance channel to Sinclair Inlet (US Navy 2008).

Nearshore sediments along the north shore of Sinclair Inlet and in the central inlet are dominated by silt and clay, while sand is primarily restricted to the mouth of inlet where the currents are higher (McLaren 2011). The implications of the depositional nature of the inlet are for contaminated sediments to remain resident in the inlet for long periods.

Tidal currents and winds are the primary sources of water circulation in Sinclair Inlet. Weak tidal currents move water in and out of the inlet with a maximum velocity of 0.2 to 0.3 knots. Analysis of tidal currents in 1994 indicated residual current speeds of less than 0.2 knots (10 cm/second [s]) for more than 90 percent of the time, regardless of site location, water depth, or season. Residual current speeds higher than 0.2 knots were rare, and speeds higher than 0.4 knots occurred less than 0.5 percent of the time. Surface currents generally flow out of the inlet, although surface current flow into the inlet has been observed during summer months. Near-bottom currents primarily flow into the inlet, regardless of season. Currents are generally not capable of re-suspending bottom sediments. Site characteristics for Pier 7 are shown in Table 3.

Various studies have noted a predominantly clockwise gyre in the inlet that tends to redeposit most suspended sediments in the inlet. This effect and the generally weak nature of these currents make the inlet more depositional than erosional for both mud (silt and clay) and sand-sized particles. Existing sedimentation rates are about 0.24 centimeters per year (Crecelius et al. 2003). Statistically significant trends have been noted for both sediment deposition and erosion within BNC. The deposition of sediments at BNC is a function of the circulation pattern of the inlet. The erosional trend in the northeast end of OU B indicates a separate source of sediment resuspension, likely associated with the higher water velocities common in Port Washington Narrows, adjacent to the northeast end of the Complex, and possibly also with propeller wash from Naval vessels and State ferries. Sediments picked up from the sea floor in this area may eventually redeposit within the inlet, or they may enter the higher- energy environment to the east and be transported away from the inlet.

Table 3. Site Characteristics at Pier 7.

Water Properties	**Mean Range**	**Diurnal Range**
Tide (NOAA 2012)	2.44 m	3.58 m
	Avg	Range
Bottom Depth (NOAA 2011)	12.5 m	10.7 -15.5 m
Temperature (Albertson et al. 1993)	14.5 C	9.7 - 21.7 C
Salinity (Albertson et al. 1993)	29.3 PSU	28.3 - 30.3 PSU
	Avg	Upper Bound
Current Speed (Wang and Richter 1999)	2.5 cm/s	40 cm/s
Sediment Texture (McLaren 2011)		
Type	Sandy Mud/Muddy Sand	
	Phi	mm
Mean	4.35	0.05
	Avg	Range
Gravel %	0.0	0 - 0
Sand %	45.2	20.5 - 75.7
Mud %	54.8	24.3 - 79.5
TOC % (URS 2012)	3.1	1.1 – 3.5

* m = meters. PSU = practical salinity units. cm/s = centimeters per second

The prevalent southwesterly winds push surface waters out of the inlet, bringing deep water to the surface for replacement. Observations during the winter and summer of 1994 showed that winds having sustained speeds of 9 or 10 miles per hour from the southwest generated near- surface and mid-level currents out of and into the inlet, respectively. Wave climate in the inlet is dictated by wind-generated waves and vessel wakes. Vessel traffic ranges from small recreational and commercial fishing vessels to occasional larger tug and Navy ship traffic. Wind action in Sinclair Inlet generally creates a wave height range of 0.5 to 2.5 feet. Maximum wave heights are generated with winds from the southwest.

TOC content is an important characteristic of marine sediments, because of its influence on benthic habitat and bioavailability of organic compounds. The average TOC ranges from 2.7-2.9% percent within OU B, and 2.5- 2.8% in the remainder of the inlet as reported from the long term monitoring conducted for Sinclair Inlet (US Navy 2015b). These concentrations are within the range of TOC contents found in other enclosed embayments in the Puget Sound region (US Navy 2008).

The sediments in the nearshore area of the shipyard have been designated as OU B Marine under the CERCLA response action for cleanup. A Record of Decision (ROD) for OU B was signed in June 2000 (US Navy, Ecology, and USEPA 2000). A component of the ROD required dredging contaminated marine sediments within OU B Marine and disposing them in a confined aquatic disposal (CAD) pit created within inner Sinclair Inlet. The remedy also included monitored natural attenuation, which relies on natural sediment recovery processes to gradually cover any residual contamination with cleaner sedimentary deposits. The objective of the remedy was to reduce sediment-bound PCB exposure to benthic infauna to protect tribal consumption of fish and shellfish. Cleanup goals for PCBs were defined for area-weighted average sediment concentrations and English sole fish tissue concentrations (US Navy, Ecology, and USEPA 2000). Subsequent reviews identified mercury was also a contaminant of concern for tribal consumption of fish and shellfish (NAVFACNW 2012). During a fender pile replacement project for Pier 7 in 2010, elevated PCBs, mercury, and other contaminants were found adjacent to Pier 7 (NAVFAC NW 2012). Based on these findings, the SSC Pacific was tasked to perform a laboratory treatability study to test and evaluate an alternative *in situ* sediment treatment method using a reactive amendment on sediments collected from Pier 7. Concurrently, the SSC Pacific submitted a proposal to the ESTCP to conduct a pilot-scale sediment amendment demonstration project at the site using AC (Chadwick et al. 2011). The proposal was selected for funding in Fiscal Year 2011, and following a successful laboratory go/no-go evaluation (Kirtay et al. 2012), the field demonstration was initiated in August 2012 as a remedial action pilot study under the CERCLA ROD for OU B Marine.

4.3 CONTAMINANT DISTRIBUTION

Pier 7 lies within an area known as OU B Marine that was previously subject to a Superfund sediment cleanup (USEPA 2000a). The primary components of the remedial action included dredging, disposal in a pit excavated in the sea floor in Sinclair Inlet, capping of contaminated sediments in a small area at the southwest end of the naval complex and placement of a thin layer of clean sediment to promote recovery of sediments (enhanced natural recovery) in the area around the cap, stabilization of a section of shoreline in the center of the naval complex and allowing for the ongoing processes of sediment natural recovery to continue to decrease the residual contamination throughout the area over a period of 10 years (US Navy 2008).

The areas within OU B Marine found to have the highest PCB levels were identified for dredging. The highest levels of PCBs were found mostly in areas along the shoreline or berthing areas adjacent to the moorings and piers. A limited amount of additional dredging was included in the remedial action based on a combination of elevated mercury levels and moderately-elevated levels of PCBs.

Because BNC is an active naval facility, there is on-going maintenance and construction in the area. Sediments near Pier 7 were subject to additional rounds of sampling to document conditions in vicinity of the pier prior to replacement of fender piles associated with the pier. Both pre- and post-sampling was carried out to meet the requirement of state water quality certification for the project (US Navy 2008; US Navy 2010).

The pre-construction sediment sampling involved collection and analysis of 11 sediment samples (0-10 cm) for PCB and TOC, and grain size. PCBs were detected in all of the samples. PCB concentrations (quantified as total Aroclors) ranged from 0.12 milligrams per kilogram (mg/kg) – 35 mg/kg (2.0 – 1,100 mg/kg OC normalized).

In 2009, work commenced at Pier 7 to remove 325 timber creosote piles and replace them with 166 concrete pilings and place a sand blanket and gravel armoring on the bottom covering about 15 feet either side of the piling line. Upon completion of this project, post-sampling was carried out at the same sampling locations as well as additional samples collected near the areas containing the highest PCB concentrations measured during the pre-construction sampling (Figure 9). PCBs were detected in all but two samples and ranged in concentration from 0.028 mg/kg to 2.0 mg/kg (0.94 to 140 mg/kg OC normalized). In general overall PCB concentrations were lower in the post-construction samples than were measured in the pre-construction samples. However, the highest levels were still observed in the samples collected around locations P7-04 and P7-05 (Figure 9, US Navy 2010).

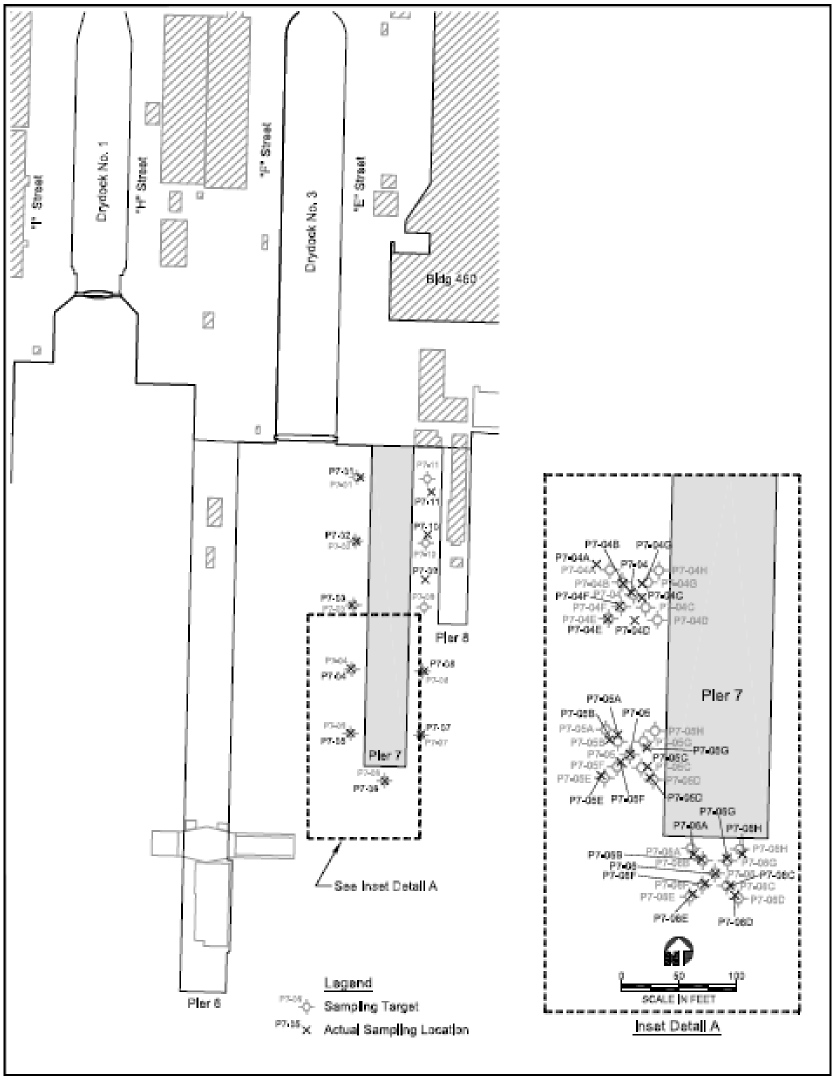


Figure 9. Sample Locations (US Navy 2010). Pre- and Post-construction Sampling for Pier 7 Included Additional Samples Collected near Areas of Elevated PCB Contamination (Insert) Found during Pre-construction Sampling.

Despite a determination that the Pier 7 construction activities would not have a direct impact on achieving the OU B Marine cleanup goals, the continual presence of elevated levels (above Washington State Sediment Quality Standards [SQS]) of PCBs (and mercury) in the Pier 7 area, resulted in the desire to test alternative *in situ* treatment methods, such as reactive amendments, in this area.

The Navy has conducted several rounds of marine investigations since 1990, including extensive sediment sampling, analyses of tissues of several different marine species, and other tests for direct biological evidence of impacts within the marine environment (US Navy 2008). Based on the results of previous investigations, a decision was made to address the need for marine sediment Remedial Action (RA). The basis for and approach to OU B Marine RA was documented in a ROD for OU B Marine. The results of many of these investigations are summarized in the Remedial Investigation (RI) report (US Navy 2008).

The following Remedial Action Objectives (RAOs) established in the ROD for OU B Marine included:

- Reduce the concentration of PCBs in the biologically active shallow sediments from 0 to 10- cm depth within OU B Marine to below the minimum cleanup level (MCUL), as a measure expected to reduce PCB concentrations in fish tissue; Control erosion of contaminated fill material in the central shoreline area of the complex known as Site 1.
- Selectively remove sediment with high concentrations of mercury co-located with PCBs. The sediment cleanup at OU B Marine was developed on the basis of an MCUL for total PCBs of 3 mg/kg OC, measured on an Area Weighted Average (AWA) basis in 0 to 10 cm marine sediments throughout the OU B Marine area. The MCUL of 3 mg/kg OC for PCBs in OU B Marine sediments was developed based on natural recovery modeling that predicted this MCUL could be achieved within 10 years of completion of the RA assuming a post-RA AWA of 4.1 mg/kg OC.

The RA was initiated in June 2000 and the primary remedy elements were completed by the fall of 2001. The primary components of the RA were as follows:

- Dredging of contaminated sediments;
- Disposal of contaminated sediments in a pit excavated in the sea floor in Sinclair Inlet;
- Capping of contaminated sediments in a small area adjacent to OU A at the southwest end of the naval complex and placement of a thin layer of clean sediment to promote recovery of sediments (enhanced natural recovery [ENR]) in the area around the cap; and stabilization of a section of shoreline in the center of the naval complex.
- The contaminated sediment offshore of OU A was remediated via placement of a thick cap and ENR. These RAs were conducted from June 2000 through November 2001. ENR of state-owned aquatic lands adjacent to the CAD pit were conducted in February and March 2004 and completed on March 14, 2004.

The intent of the RAs in OU B Marine was to perform a gross removal of PCB-contaminated sediment to support the long-term natural recovery objective of reducing the OU B Marine AWA PCB concentrations to below the MCUL of 3 mg/kg OC normalized. Attainment of this objective, as specified in the Final ROD, was to be within 10 years of the completion of RAs (US Navy 2008).

Monitoring results indicate the concentrations of PCBs and mercury were declining within OU B Marine. However, the area around Pier 7 has consistently resulted in elevated concentrations of PCBs and mercury (US Navy 2010, 2015b). While the concentrations are not extremely elevated, they fall within the range of moderately contaminated and are representative of typical concentration ranges found at most Navy sites.

In 2011, a treatability study to support the efficacy of AquaGate as an appropriate amendment for PCB sequestration in Pier 7 BNC sediment was conducted as part of a Go/No-Go decision for this demonstration project. This laboratory study, funded by NAVFAC NW, demonstrated that amending the contaminated sediment with AC (in the form of AquaGate) effectively reduced the bioavailability of PCBs to the marine polychaete, *N. arenaceodentata* (Section 5.3). Increasing

AquaGate contact time with the BNC sediment resulted in progressively lower biouptake with up to 94% total PCB reduction in exposures following one month of mixing. In addition, polychaete survival was very high with ≥ 96% survival in all treatments, while growth was not adversely affected when compared to the control sediment for any treatment.

5.0 TEST DESIGN

This section provides a detailed description of the experimental design, sampling, and analytical methods used to evaluate the effectiveness of reactive amendment (AquaGate) at the Site. Approaches presented below focus on the physical, chemical, and biological characterizations of the Site, both pre- and post-implementation of the amendment, to address the performance objectives described in Section 3 (Performance Objectives).

5.1 CONCEPTUAL EXPERIMENTAL DESIGN

Prior to the field-scale demonstration, a laboratory treatability study was performed to evaluate the site-specific effectiveness of the reactive amendment using sediments collected from the vicinity of Pier 7 site. For this project, a field-scale demonstration of the effectiveness of reactive amendment was performed. Baseline conditions were characterized prior to amendment placement and surface sediments were monitored for 3 years after amendment placement at several intervals. Physical, chemical, and biological parameters were monitored to evaluate the performance objectives.

- Physical parameters were used to demonstrate uniform deep water placement in the target area by assessment of the distribution and coverage, uniformity, and thicknesses of the amendment immediately after placement and to evaluate changes due to natural sedimentation, benthic mixing, and ship or tug activity. Physical parameters included:
  - Images of the profile of the sediment
  - Measurement of TOC in sediment
  - Measurement of BC in sediment
  - Visual assessment of cores
- Chemical parameters were used to measure the magnitude the reactive amendment reduced contaminant bioavailability and sustainability of bioavailability reductions over time. Chemical parameters included:
  - Measurement of concentrations of PCBs, mercury, and methylmercury in tissue
  - Measurement of concentrations of PCBs in sediment porewater
  - Measurement of concentrations of PCBs, mercury, and methylmercury in bulk sediment
- Biological parameters were used to evaluate potential changes in the benthic community in response to amendment placement. Biological parameters included:
  - Benthic community census
  - Images of the profile of the sediment

5.2 BASELINE CHARACTERIZATION

Baseline characterization occurred in August 2012 (2 months prior to amendment placement) to establish pre-remedial baseline bioavailability and ecological conditions for the Site. Baseline characterization included:

- Benthic community census,

- Bioavailable concentrations in tissue *(in situ* SEA Ring bioaccumulation),
- Bioavailable concentrations in sediment porewater (*in situ* SPME passive sampling),
- Concentrations in sediment,
- SPI survey
- TOC and BC contents and grain size of sediment

These activities are discussed further in Sections 5.4 (Design and Layout of Technology Components) and 5.5 (Field Testing). The results of the baseline characterization are given in Section 5.7 (Sampling Results).

5.3 LABORATORY TREATABILITY STUDY

In 2011, SSC Pacific carried out laboratory treatability studies by mixing commercially available PAC reactive amendment AquaGate + PAC™ with PCB- and mercury-contaminated sediments obtained from the contaminated area adjacent to Pier 7 at PSNS & IMF. Components of treatability study included pre- screening the site to delineate the nature and extent of contamination, conducting laboratory studies to verify the effectiveness of the amendment in terms of reducing contaminant bioavailability, and testing the SPI system (Germano and Associates 2012) for its ability to distinguish the amendment from native site sediment to support monitoring the placement, stability and mixing of the amendment after installation.

5.3.1 Laboratory Treatability Methods

In May 2010, a diver assisted sediment survey was conducted around Pier 7 to more thoroughly delineate the nature and extent of contamination at the site and to identify sediments suitable for use in the lab treatability study (Figure 10). Ten transects perpendicular to the pier were established with 4-inch surface cores taken about every 50 feet in the berthing area and every 30 feet under the pier and avoiding the recently disturbed area 15 feet on either side of the fender pilings (Figure 11). Rapid Sediment Characterization (RSC, Kirtay et al. 2001) methods were used to rapidly screen the samples using a portable X-ray Fluorescence (XRF) detector for metals (copper [Cu], zinc [Zn], and lead [Pb]) and Enzyme Linked Immuno-Sorbent Assays (ELISA) for PCBs (as Aroclor 1254, RaPID™ Assay, Strategic Diagnostics Inc., Newark, Delaware) and PAHs (as total PAHs, USEPA Method 4035). A subset (20%) of the samples was used for confirmation analysis using more expensive analytical techniques including inductively coupled plasma mass spectroscopy (ICP-MS) for metals and gas chromatography/mass spectroscopy (GC/MS) for organics (Guerrero et al. 2011). A split of each sample was also submitted for laboratory analysis for total mercury using cold vapor atomic absorption (CVAA) and grain size distribution (McLaren 2011).

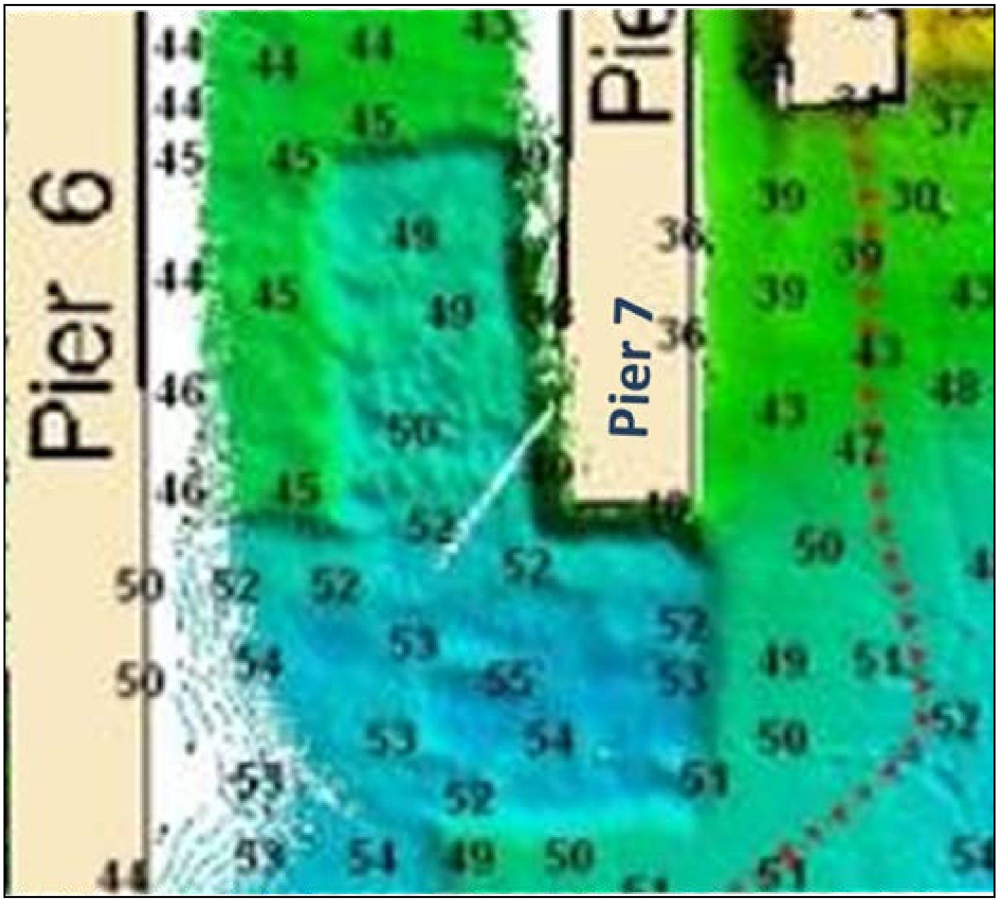


Figure 10. Bathymetry in Vicinity of Pier 7 (Units are in Feet from MLLW).

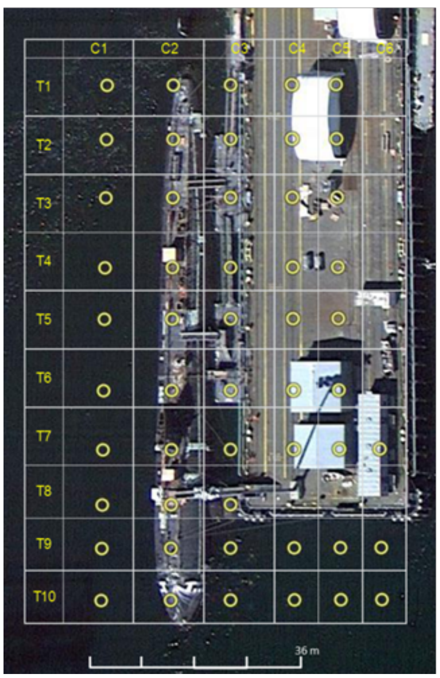
Bioassays using site sediments amended with a standard formulation of the AquaGate, as described above, were conducted at SSC Pacific to verify the effectiveness of the amendment material in terms of reduction in contaminant bioavailability to benthic organisms. The bioassays also evaluated different degrees of mixing including a No Mix, a Partial Mix (24 hour) and a Full Mix (1 month) prior to exposure to test organisms. Bioassays involved standard 10-day amphipod and 28-day polychaete exposures to assess any potential adverse toxic effects to growth and mortality endpoints from a) the native sediment, b) the uncoated aggregate that acts as the delivery mechanism for the AquaGate, and c) the AC-coated AquaGate. Bioaccumulation testing involved conducting standard 28-day bioaccumulation studies on the reactive amendment/sediment mixtures. PCB sediment concentrations were also measured in each of the untreated and treated sediments used for the bioaccumulation studies. The aggregate was removed by SSC Pacific laboratory personnel prior to homogenizing and analyzing the samples using standard methods (USEPA method 8082).

Additional laboratory testing also involved evaluating the degree to which the SPI camera system, with digital image analysis, was able to distinguish the amendment from native site sediment post-placement. The ability to monitor the placement and the physical stability of the reactive amendment in deeper water areas that support vessel traffic is a vital component in demonstrating the efficacy of this type of *in situ* treatment method. Testing was carried out pre- and post-application and mixing of the amendment, via mechanical means, to the native sediment.

5.3.2 Laboratory Treatability Results and Discussion

5.3.2.1 Site Characterization

Within 36 hours of sampling, the screening data were used to identify the location of elevated PCB contamination. The results showed an isolated area of elevated contamination for PCBs and patchy locations of elevated total mercury (Figure 11). Bulk sediment samples were collected from cell (T6, C3) for the laboratory go/no-go evaluation study (Kirtay et al. 2012). Washington State Sediment Quality Criteria (SQC) and Maximum Cleanup Levels (MCL, WAC 173-204) were exceeded by the maximum concentrations of PCBs, mercury, Cu, and Zn, while only mercury exceeded the sediment standards based on the 90th percentile (90% of mean) of the geometric mean (geomean). Table 4 shows the geomean, detection limit (DL), minimum (min), maximum (max), average, standard deviation (SD), 90th percentile of the geomean (90% of mean) and corresponding sediment texture ranged from sandy mud to muddy sand with an average size of 0.05 millimeters (mm) and average TOC content of 3.1% (Table 4). Additional sediment was collected from the area where the highest levels of PCBs were measured (cell T6, C3) and shipped to SSC Pacific for the laboratory bioaccumulation, toxicity, and sediment chemistry treatability studies.



PCB_{RSC} ng/g

	C1	C2	C3	C4	C5	C6
T1	234	192	91	46	152	
T2	176	151	28	261	58	
T3	170	96	285	74	48	
T4	341	140	113	133	11	
T5	111	594	159	150	74	
T6	243	262	6650	305	439	
T7	224	261	129	655	193	105
T8	227	129	163			
T9	74	74	73	84	80	
T10	161	24	126	92	134	115

Hg ug/g

	C1	C2	C3	C4	C5	C6
T1		0.64	0.40	0.24	0.62	
T2	0.52	0.20		0.70	0.17	
T3	0.43	0.11	0.73	0.19		
T4	1.19	0.29	0.45	0.57	0.21	
T5	0.21	0.83	0.69	0.44	0.49	
T6	0.56	0.49	0.90	0.36	0.60	
T7	0.33	0.85	0.14	0.69	0.34	0.26
T8	0.12	0.17	0.28			
T9	0.32	0.35	0.17	0.06	0.18	0.20
T10	0.67	0.06	0.44	0.81	0.92	1.00

Figure 11. Locations of Sediment Samples and Corresponding Concentrations. *Locations of Sediment Sampling Transects (left figure), and Concentrations of PCBs (ELISA, ng/g, middle figure) and Hg (CVAA, µg/g, right figure) in Surface Sediment Samples Collected from Pier 7 to Characterize the Site and Identify Sediments for Use in the Laboratory Treatability Study.*

Table 4. Screening Site Characterization Results for PCBs, PAHs, Cu, Zn, Pb and Hg.

	PCBs ng/g	PAHs µg/g	Cu µg/g	Zn µg/g	Pb µg/g	Hg µg/g
DL	44.7	0.18	70.1	60.7	39.7	0.005
min	4.6	0.18	70.1	60.7	39.7	0.058
max	5549.1	4.58	3659.1	1182.7	431.6	1.189
average	241.1	1.32	176.2	273.2	83.5	0.445
SD	773.1	0.75	507.6	188.1	61.7	0.278
geomean	101.5	1.12	100.9	230.7	73.1	0.356
90% of mean	288.8	2.09	199.6	396.5	114.8	0.738
median	112.1	1.38	70.1	228.0	61.0	0.402
WA SQC	372.0*	41.23*	390.0	410.0	450.0	0.410
WA MCL	2015.0*	188.48*	390.0	960.0	530.0	0.590

* Assuming a TOC content of 3.1%.

DL = detection limit. SD = standard deviation. **ng = nanogram. g = gram. µg = microgram. WA = Washington. SQC = sediment quality criteria, MCL = maximum cleanup level.

RSC results converted using regressions from the confirmation analysis (Guerrero et al. 2011).

$$\boldsymbol{PCBs = 0.8344 \times PCB_{RSC} \quad R^2 = 0.811}$$
$$\boldsymbol{PAHs = 0.1810 \times PAH_{RSC} \quad R^2 = 0.923}$$
$$\boldsymbol{\mathrm{Cu} = 1.46 \times Cu_{RSC} \quad R^2 = 0.850}$$
$$\boldsymbol{\mathrm{Zn} = 1.40 \times Zn_{RSC} \quad R^2 = 0.815}$$
$$\boldsymbol{Pb = 1.04 \times Pb_{RSC} \quad R^2 = 0.810}$$

5.3.2.2 Laboratory Bioaccumulation, Toxicity, and Sediment Chemistry

The results from the treatability study demonstrated that amending the contaminated sediment collected from the Pier 7 site with AC (in the form of AquaGate in this study) effectively reduced the bioavailability of PCBs to the marine polychaete, *Neanthes arenaceodentata*. Increasing AquaGate contact time with the Pier 7 sediment resulted in progressively lower biouptake with up to 94% reduction of total PCBs for the 1 month mixed treatment. Figure 12 shows the concentration of total PCBs in tissue (nanogram [ng]/gram[g], ww, shown on the left) and reduction in total PCBs in tissue (shown on the right) in *N. arenaceodentata* following 28-day laboratory exposures following different mixing duration of Pier 7 sediment amended with AquaGate. There were 3 replicates per treatment in the study.

Laboratory toxicity testing was also carried out to assess any potential adverse toxic effects from the unamended as well as amended sediment. Polychaete survival was very high with ≥ 96% survival in all treatments. Growth was not adversely affected when compared to the control sediment for any treatment, nor when the unamended sediment was compared to the 1 Month Mixed treatment ($p>0.05$). However, the No Mix and 24-Hr Mix treatments did result in statistically lower final weights relative to the unamended Pier 7 sediment. Table 5 shows treatability study results from 28-day exposures with the marine polychaete *N. arenaceodentata* (n=9 for survival and ww; n=3 for lipid data; statistical differences among treatments are indicated by different letters, $p<0.05$, SD and statistical significance [Sig] shown by different lettering. These results suggest that there is an increased likelihood for reduction in growth immediately following amendment addition, possibly due to a more concentrated, exposure of the PAC to the polychaetes initially. However, over time growth does not appear to be adversely affected.

PCB sediment concentrations were measured in the unamended and amended sediment samples at the end of the experiment. The results showed a fairly dramatic decrease in total PCB concentrations between the unamended and the amended sediments (Figure 13) which could be attributed to a change in the extractability of the PCBs from the unamended sediments and the sediments amended with the AC (no mix, 24 hour mix, and 1 month mix, concentrations in ng/g).

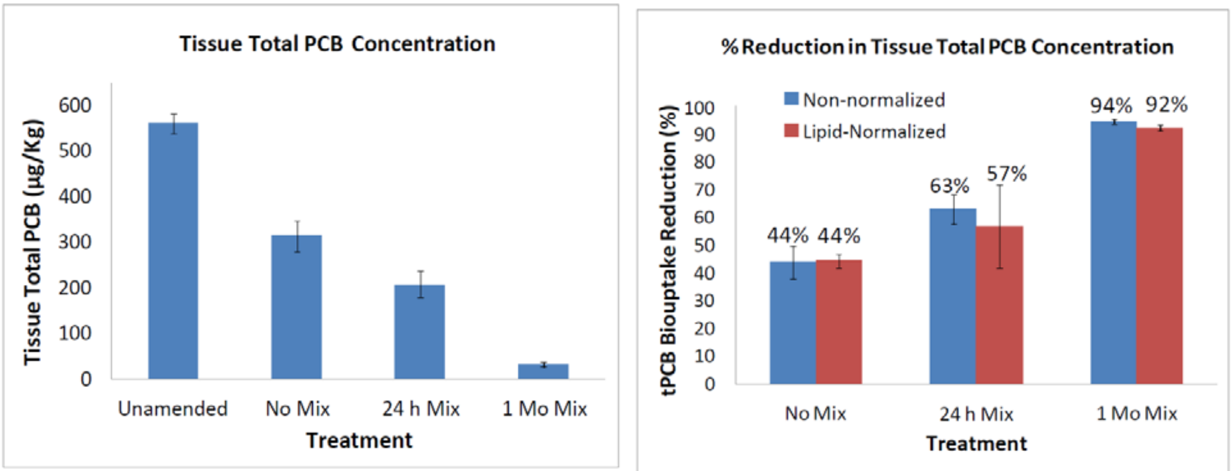


Figure 12. Concentration and Percent Reductions of Total PCBs in Tissue from Treatability Study Tissue. *Results are shown as Mean ± SD. Concentrations of PCBs in Tissue are on a Wet Weight Basis.*

Table 5. Treatability Study Results from 28-day Exposures with the Marine Polychaete *Neanthes Arenaceodentata*.

Sample ID	Survival (%)			Individual WW (mg)			Lipid (%)		
	Mean	SD	Sig	Mean	SD	Sig	Mean	SD	Sig.
Control	96	2.7	A	19.6	2.0	A	1.7	0.51	A
Unamended	97	5.1	A	23.5	3.0	B	2.0	0.15	A
No Mix	97	3.9	A	18.4	1.4	A	2.0	0.13	A
24 Hour Mix	96	5.0	A	18.9	1.1	A	1.9	0.69	A
1 Month Mix	97	3.2	A	22.5	2.7	B	1.4	0.06	A

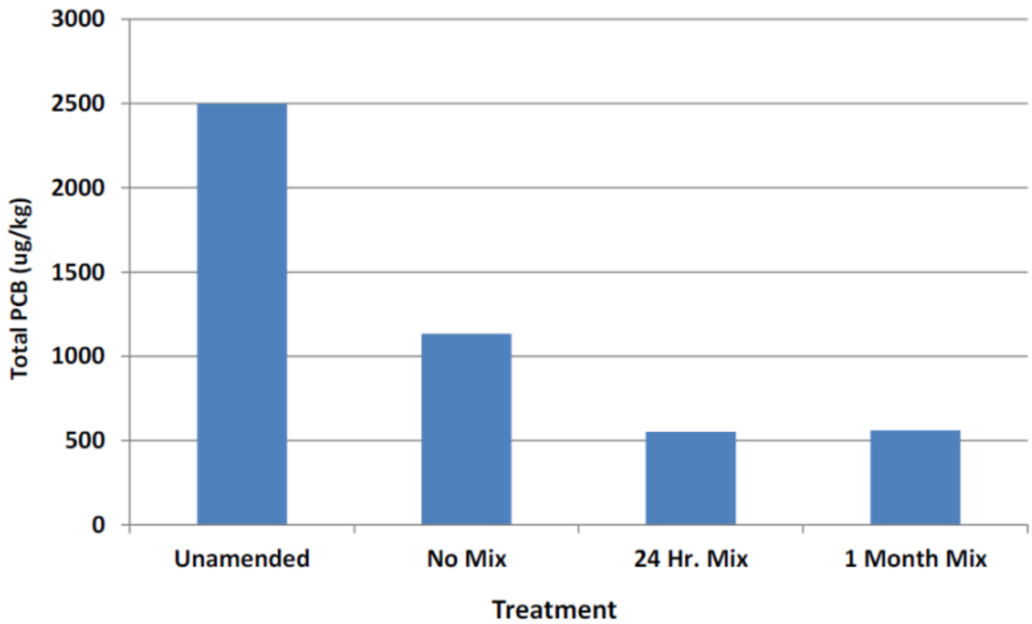


Figure 13. Mean Concentrations of Total PCBs in Sediment in the Unamended and Amended Sediment Samples Used for the Laboratory Bioaccumulation Studies.

5.3.2.3 Verification of Amendment Placement and Mixing

A hand-held SPI camera system was tested in the laboratory on four different sediment treatments: 1) unamended sediment, 2) sediment with 1" layer of AquaGate placed on top, 3) amended sediment with a 1: 1 mixture of sediment and AquaGate placed on sediment surface and 4) amended sediment with a 3: 1 mixture of sediment and AquaGate placed on sediment surface. In each of the amended treatments, two distinct layers could be observed in the SPI images. While the distinction between the amended layer and the underlying sediment was less obvious in the 1:1 and 3:1 mixtures as compared to the initial treatment (placed on sediment surface), the amended layer could be distinguished as a thicker, darker, more consolidated layer on top of the coarse-grained sediment below. Figure 14 shows SPI camera images from 1) unamended sediment, 2) AquaGate on top, 3) 1:1 mixture and 4) 3:1 mixture, from left to right.

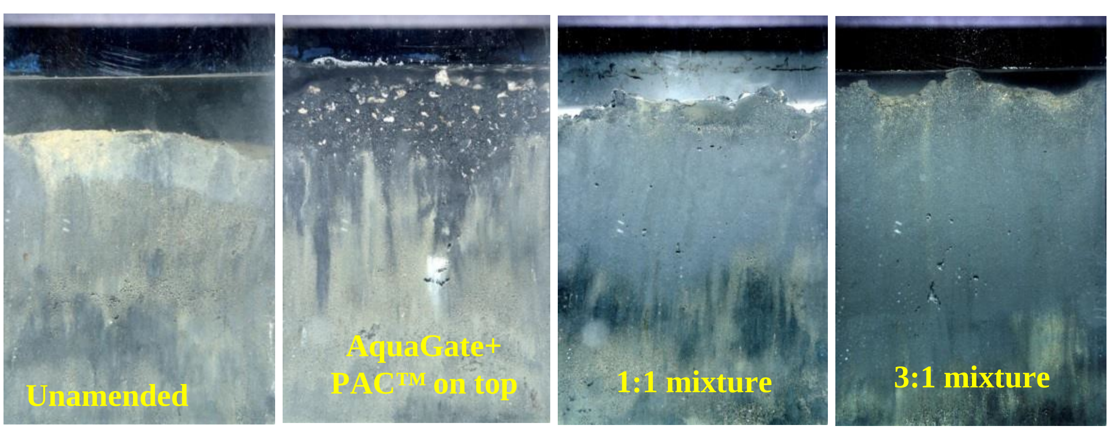


Figure 14. SPI Camera Images from Treatability Study.

The results from this treatability study suggested that the formulation of AquaGate tested in the lab would be effective at reducing the PCB bioavailability. Additionally, the results from testing the SPI camera as a placement/stability verification monitoring tool also yielded promising results as the tool was able to distinguish the amendment from the native sediment. Results from the lab treatability study were used to support the design of the pilot-scale demonstration at PSNS & IMF (Kirtay et al. 2013).

5.4 DESIGN AND LAYOUT OF TECHNOLOGY COMPONENTS

Performance of the amendment placed for remediation at the Site was evaluated by establishing a baseline under and around Pier 7 and comparing the results of the baseline characterization to post-placement monitoring events which occurred at 0.5, 3, 10, 21, and 33-months post amendment placement to document the extent to which the amendment material mixes with underlying sediment, surface layer contaminant bioavailability changes, and ecological health was potentially changed. The amendment placement is detailed in Section 2.1.5 and the methods of the baseline characterization and monitoring events are detailed in Section 5.6.

5.5 FIELD TESTING

5.5.1 Sampling Locations

The sampling locations included the following:

- 10 multi-metric stations (Figure 15) placed on the target amendment placement area (amended stations). The following observations were made at multi-metric sampling locations:
  - SEA Ring *in situ* benthic invertebrate bioaccumulation;
  - Core sampling to provide visual confirmation as well as sectioning of cores for measurements of TOC and BC analysis to confirm stability and mixing of AC;
  - Core sampling to provide surface sediment sampling of chemical (PCBs, mercury and methylmercury) and physical parameters (grain size);
  - *In situ* passive sampler (SPME) measurement of PCBs in sediment porewater; and
  - Benthic sediment grab for benthic invertebrate census.
- 4 benthic community census reference stations (Figure 16) were located off of the target amendment area (unamended stations). Surface sediment samples for the benthic community census were collected at these stations to provide reference benthic community census conditions to determine if changes in the condition of the benthos are also observed in areas without amendment. Benthic community can be variable due to changes in season, current, and other reasons unrelated to the amendment. Reference data will provide information with which to interpret possible changes in the benthic community within the amendment placement area (e.g., discern possible changes that have occurred for the broader benthic community due to season or climatic effects unrelated to the amendment).
- 42 SPI stations **(**Figure 17**)** were spatially distributed within and adjacent to the amendment area to provide information about sediment physical characteristics, benthic invertebrate community ecological health, and amendment presence, depth, and mixing. During the 10-month monitoring event, 8 additional sampling locations were added to the existing 42 SPI

stations for a total of 50 stations (Figure 18). For the 33-month event, 1 additional SPI station was added for a total of 51 stations (Figure 19). Also during the 10-, 21-, and 33-month sampling events the SPI transect 3 was moved about 20 feet to the west to avoid the sand blanket and gravel armoring that had been placed around the pilings following completion of the fender piling replacement project.

For the multi-metric and reference stations, the baseline sample locations were found by measuring distances from structures on the pier and global positioning system (GPS) coordinates were obtained by plotting the locations on a geographic information system (GIS) map (Table 6). During the baseline characterization, the team and divers located the stations and then marked the stations with buoys below the surface. In subsequent monitoring events, the location descriptions were used to relocate the stations which were verified by the submerged buoy markers. Figures with detailed descriptions are provided in Appendix D.

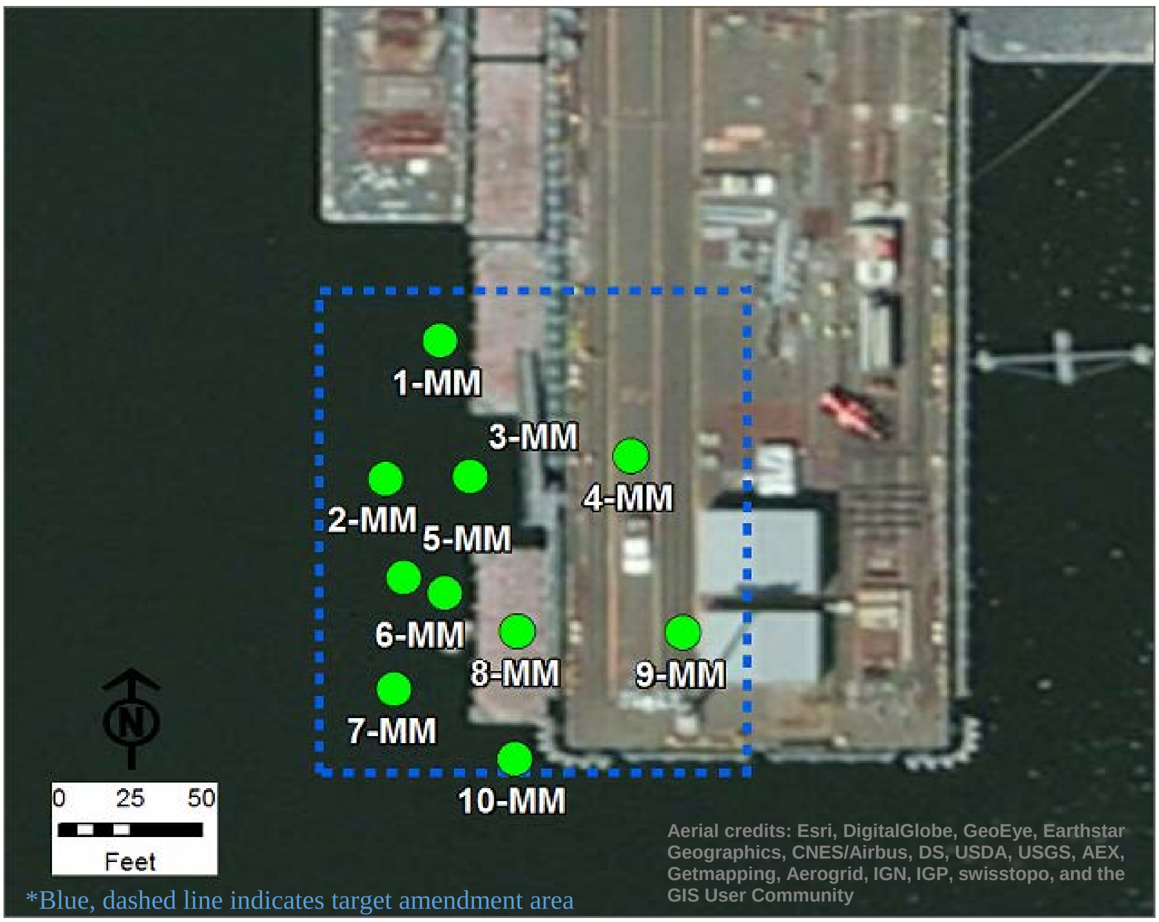


Figure 15. Multi-metric Sampling Locations.

Figure 16. Reference Benthic Community Census Sampling Locations.

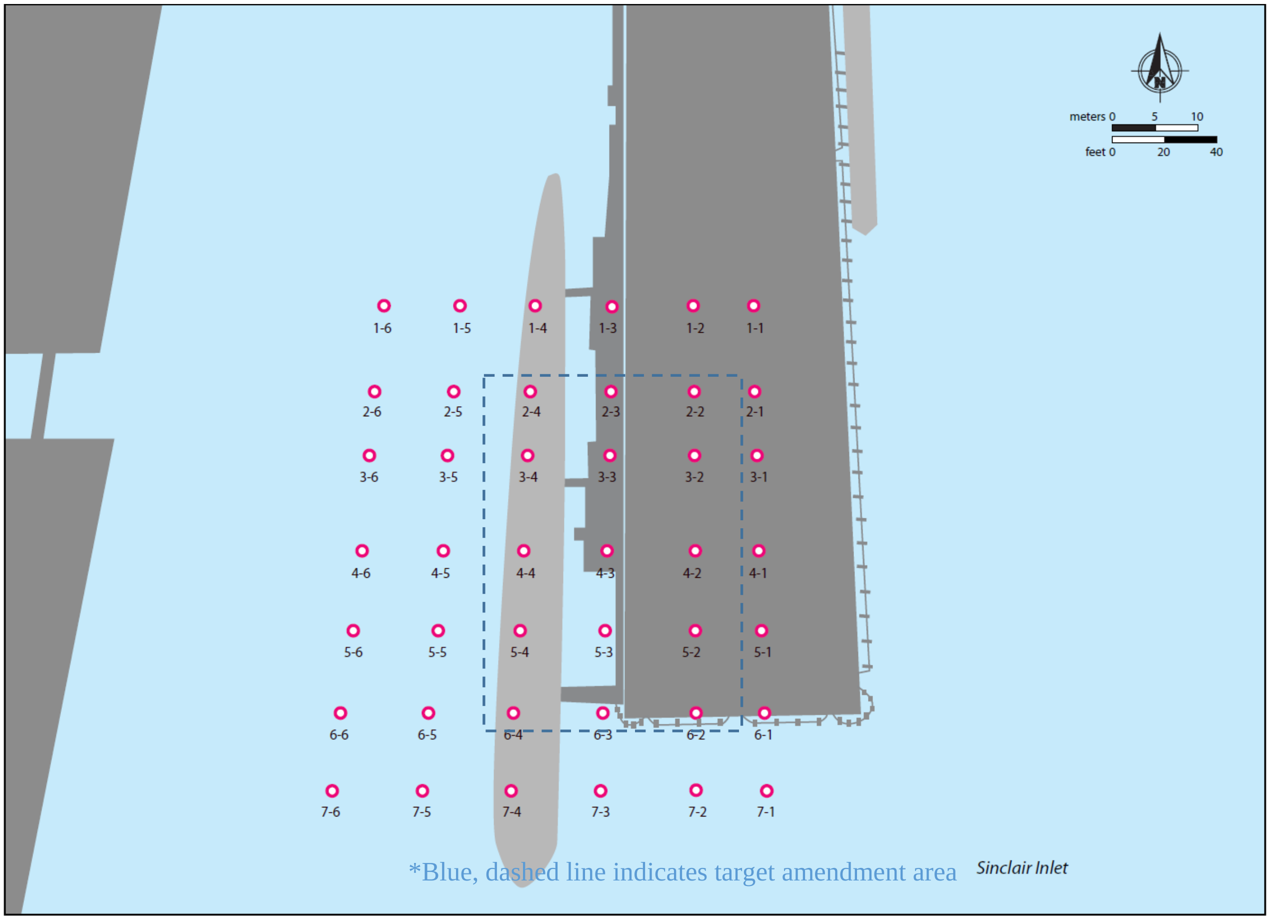


Figure 17. SPI Sampling Locations in Baseline Characterization and 0.5-month Surveys (Germano and Associates 2013a).

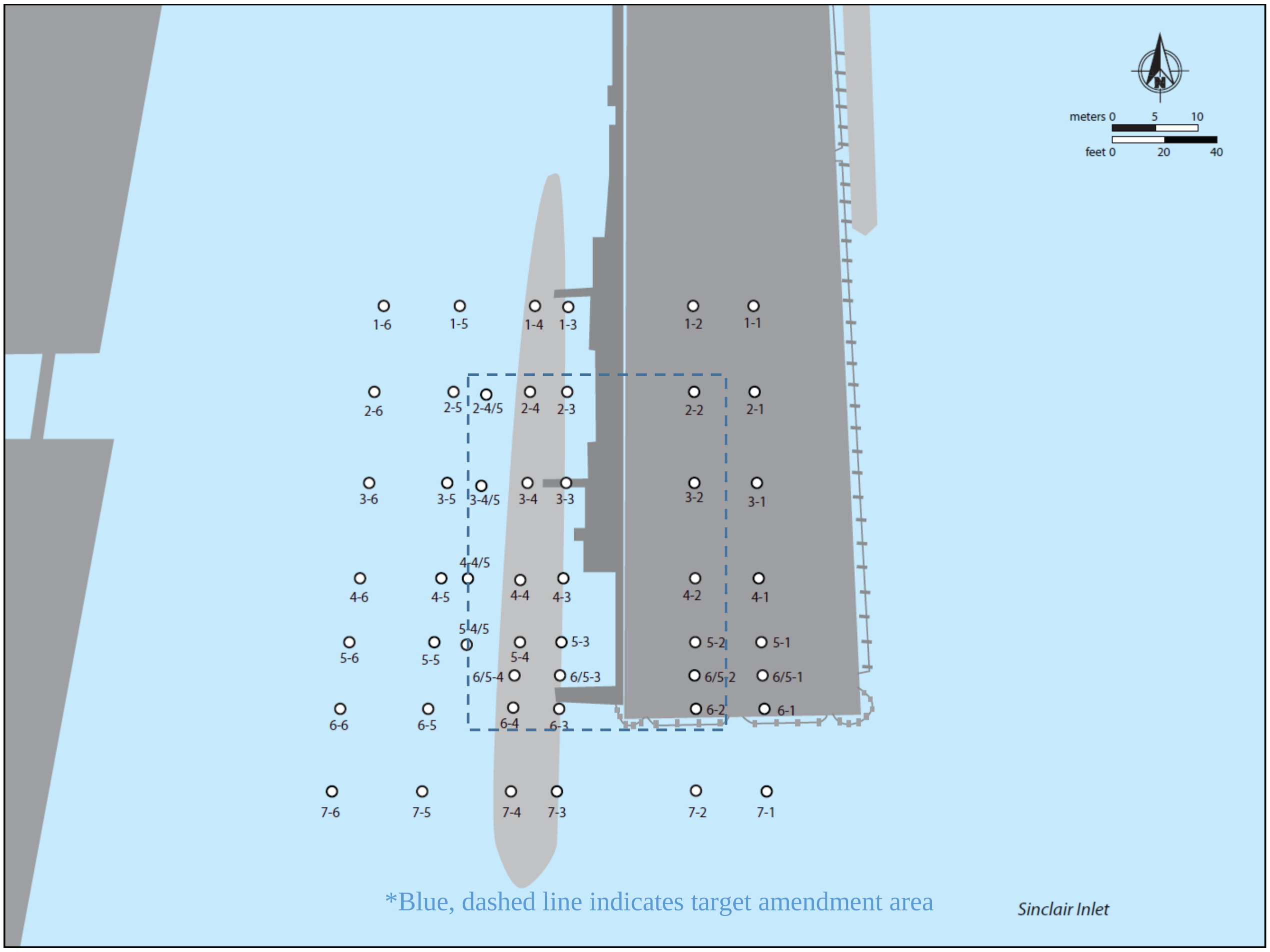


Figure 18. SPI Sampling Locations in the 10- and 21-month Surveys (Germano and Associates 2014a).

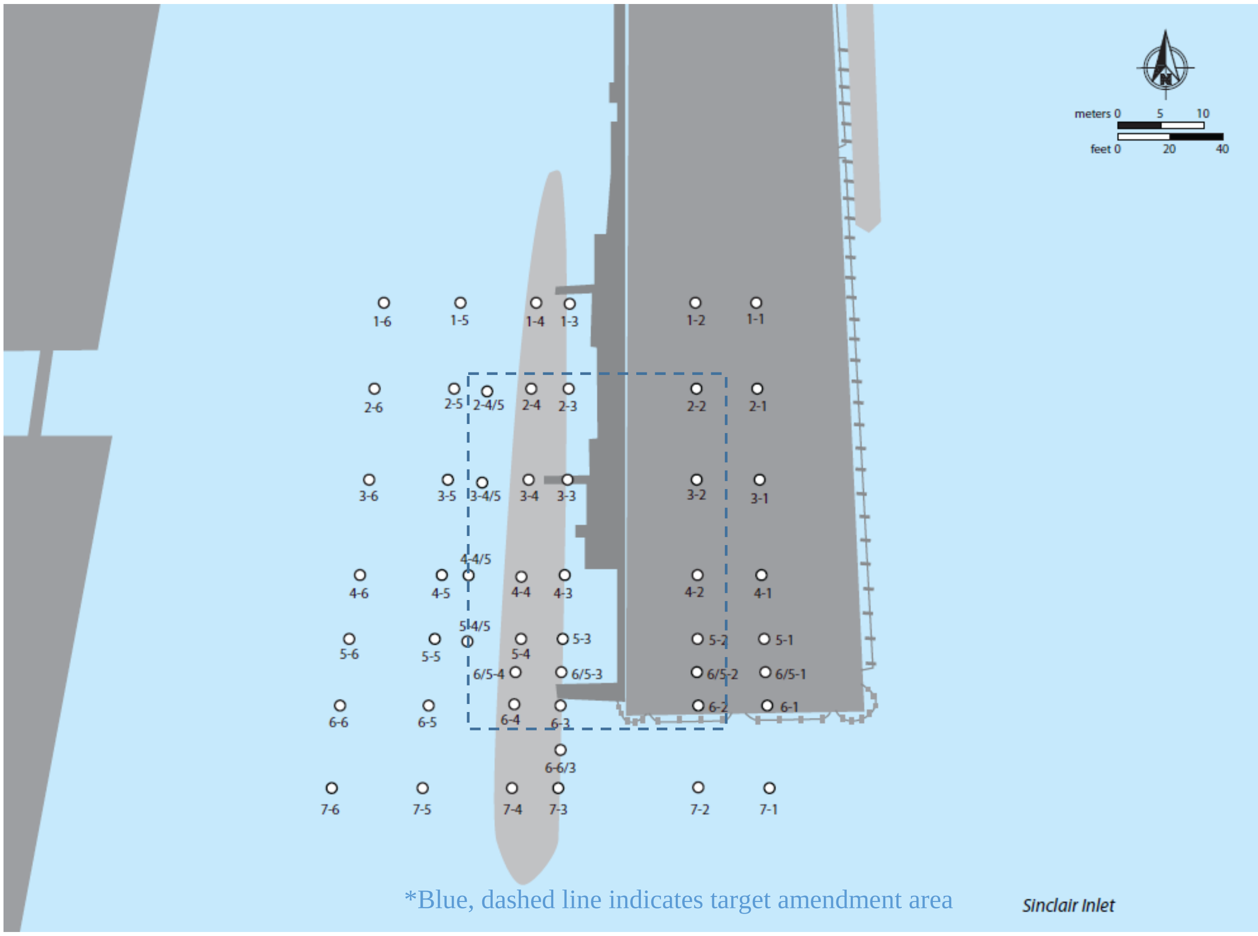


Figure 19. SPI Sampling Locations in the 33-month Survey (Germano and Associates 2015).

Table 6. Sampling Locations and Ancillary Information.

Type	Station ID (Alternative ID)	Latitude	Longitude	Description	Water Depth* (feet)	Description
Multi-metric	1 (1-MM)	47.55899	-122.62901	25 ft west of the pier in front of piling RB-46. Re-positioned out from initial position due to slope and shell debris	-37	On slope
Multi-metric	2 (2-MM)	47.55887739	-122.6290747	40 ft west of the pier between pilings FC-01 and RB-52 (inner piling # 8 and 9)	-49	Berthing area
Multi-metric	3 (3-MM)	47.55887456	-122.6289933	20 ft west of the pier (5 ft from edge of the barge); between pilings FC-01 and RB-52	-38	On slope
Multi-metric	4 (4-MM)	47.55889725	-122.6288349	18 ft east of piling FC-01 (8th inner piling); 2 ft north of Cleat 22 on top of the pier	-36	Under pier
Multi-metric	5 (5-MM)	47.5587772	-122.6290504	35 ft west of the pier (2 1/4 Barge widths); In front of piling FC-04 (5th inner pile)	-49	Berthing area
Multi-metric	6 (6-MM)	47.55876029	-122.629008	25 ft west of the pier (8ft west of the barge); between pilings FC-04 and FC-05 (4th and 5th inner piling); Re-positioned out from original location due to slope and shell debris.	-49	Berthing area
Multi-metric	7 (7-MM)	47.55866582	-122.6290703	35-40 ft west of the pier; In front of piling FC-08 (1st inner piling)	-50	Berthing area
Multi-metric	8 (8-MM)	47.55871846	-122.6289385	8 ft west of piling FC-06 (3rd inner piling); under large black bumper; in front of Cleat #B on top of the pier.	-40	On slope
Multi-metric	9 (9-MM)	47.55870292	-122.6288035	25 east of the outer piling, 1st cleat on top of the pier.	-36	Under pier
Multi-metric	10 (10-MM)	47.55860247	-122.6289432	8 ft west of the pier; 5th outer piling in (starting around the corner on the south facing side of the pier)	-40	On slope
Reference	1-RBS	47.55920519	-122.6290041	25 ft west of Piling RB32	-30	On slope
Reference	2-RBS	47.55907228	-122.6290808	45 ft west of Piling RB40	-49	Berthing area
Reference	3-RBS	47.55915843	-122.6290182	30 ft west of Piling RB35	-37	On slope
Reference	4-RBS	47.5591799	-122.6287266	From Bollard 18 under pier, south side of middle piling 10 ft from piling base	-36	Under pier

*Bathymetry based on 2007 National Oceanic and Atmospheric Administration (NOAA) survey (feet mean lower low water)

5.5.2 Schedule and Activities

The schedule for the baseline characterization, amendment placement, and monitoring events is provided in Table 7. The dates of deployment and retrieval of the SEA Rings and passive samplers are summarized as well as the SPI survey. The sediment and benthic community census samples were collected upon retrieval.

Table 7. Placement and Sampling Event Schedule.

Event	Dates
Baseline Characterization	*Deployment*: July 31-August 1, 2012 *Retrieval*: August 14-15, 2012 *SPI Survey*: August 16-17, 2012
Amendment Placement	October 16-19, 2012
0.5 Month Post-Amendment Monitoring Event	*Core Sampling*: October 30, 2012 *SPI Survey*: October 30-31, 2012
3 Month Post-Amendment Monitoring Event	*Core Sampling*: January 29, 2013
10 Month Post-Amendment Monitoring Event	*Deployment*: July 23-24, 2013 *Retrieval*: August 6-8, 2013* *SPI Survey*: August 13-14, 2013
21 Month Post-Amendment Monitoring Event	*Deployment*: July 1-2, 2014 *Retrieval*: July 15-16, 2014 *SPI Survey*: July 29-30, 2014
33 Month Post-Amendment Monitoring Event	*Deployment*: July 7-8, 2015 *Retrieval*: July 21-22, 2015** *SPI Survey*: July 27-28, 2015

*Reference benthic samples were collected on August 9, 2013.
**Reference benthic samples were collected on July 23, 2015.

Baseline characterization samples were obtained in August 2012 (2 months prior to amendment placement) to establish pre-remedial baseline bioavailability and ecological conditions for the Site. In the baseline, the following observations were made:

- Benthic community census
- Bioavailable concentrations in tissue *(in situ* SEA Ring bioaccumulation)
- Bioavailable concentrations in sediment porewater (*in situ* SPME passive sampling)
- Concentrations in sediment
- Amendment placement (for future comparison), stability and mixing (SPI)
- Amendment placement (for future comparison), stability and mixing (TOC, BC, and visual analysis of cores)

From October 16-19, 2012, AquaGate was placed in the target area. Post-placement monitoring events occurred at 0.5, 3, 10, 21, and 33 months post amendment placement. Post-placement

characterization documented the extent to which the amendment material mixes with underlying sediment, surface layer contaminant bioavailability changes, and ecological health is potentially changed.

In the 0.5 month monitoring event (October 2012), the following observations were made:

- Amendment placement, stability and mixing (SPI)
- Amendment placement, stability and mixing (TOC and BC)

In the 3 month monitoring event (January 2013), the following observations were made:

- Amendment placement, stability and mixing (TOC and BC)

In the 10 (August 2013), 21 (July 2014), and 33 month (July 2015) post-placement monitoring events, the following samples were obtained:

- Benthic community census
- Bioavailable concentrations of PCBs, mercury, and methylmercury in tissue *(in situ* SEA Ring bioaccumulation)
- Bioavailable concentrations of PCBs in sediment porewater (*in situ* SPME passive sampling)
- Concentrations of PCBs, mercury, and methylmercury in sediment
- Amendment placement, stability and mixing (SPI)
- Amendment placement, stability and mixing (TOC, BC, and visual assessment of cores)

5.6 SAMPLING METHODS

The number and types of samples are summarized in Table 8. The baseline and monitoring event activities are summarized in Table 9. The analytical methods for sample analysis are provided in Table 10.

Table 8. Sampling Activity Summary.

Activity	Number of Samples per Baseline and Monitoring Event (when applicable)	Number of Samples per Station	QA/QC	Performance Objective Addressed [1]
Benthic Community Census	10 multi-metric 4 reference	1	--	7
Bioavailable concentrations of PCBs in tissue (*in situ* SEA Ring bioaccumulation)	10 multi-metric	1 for polychaete and clam each	Time 0 tissue (triplicate) Replicate *ex situ* laboratory bioaccumulation tests	2 and 3
Bioavailable concentrations of Hg and MeHg in tissue (*in situ* SEA Ring bioaccumulation)	5 multi-metric (Stations 3,4,5,8,9) [2]	1 for polychaete and clam each	10-month event triplicate polycahete *ex situ* lab for stations 4-, 5-, 6-MM	2 and 3
Bioavailable concentrations of PCBs in sediment porewater (*in situ* SPME passive sampling)	20 multi-metric (1 within each SEA Ring and 1 adjacent to each SEA Rings) [3]	2	1 field duplicate	2 and 3
Concentrations of PCBs in Sediment (also sediment grain size)	10 multi-metric	1	1 field duplicate	2 and 3
Concentrations of Hg and MeHg in sediment	5 multi-metric (Stations 3,4,5,8,9) [4]	1	--	2 and 3
Amendment placement, stability and mixing; Benthic recovery (SPI)	42 SPI stations on and off target amendment area [5]	1	--	5, 6, and 7
Amendment placement, stability and mixing (TOC, BC, and visual analysis)	30 multi-metric	1 core subsectioned into 3 2-inch intervals	1 field duplicate subsectioned into 3 2-inch intervals	5 and 6
Amendment placement, stability and mixing	10 multi-metric	1	--	5 and 6

[1] Performance Objectives are numbered in Table 2.
[2] In the baseline characterization, *N. caecoides* also measured at Station 6-MM. In the 10-month event, *N. caecoides* was also measured at Station 10-MM. In 21-month event, *M. nasuta* also measured at Station 6-MM.
[3] For data evaluation, one result each for polychaete and clam for each station was evaluated.
[4] In the 10-month event, Station 7–MM was also measured.
[5] The 10- and 21-month events had 50 stations (8 additional stations added to the 42 existing stations). 33-month event added one additional station for a total of 51 stations.

Table 9. Baseline and Post-construction Monitoring Event Schedule and Activities.

Activity	Baseline (August 2012)	0.5 Month Monitoring Event (October 2012)	3 Month Monitoring Event (January 2013)	10 Month Monitoring Event (August 2013)	21 Month Monitoring Event (July 2014)	33 Month Monitoring Event (July 2015)	Performance Objective Addressed*
Benthic Community Census	X			X	X	X	7
Bioavailable concentrations of PCBs, Hg, and MeHg in tissue	X			X	X	X	2 and 3
Bioavailable concentrations of PCBs in sediment porewater	X			X	X	X	2 and 3
Concentrations in of PCBs, Hg, and MeHg in Sediment (also grain size)	X			X	X	X	2 and 3
Amendment placement, stability and mixing; Benthic recovery (SPI)	X	X		X	X	X	5, 6, and 7
Amendment placement, stability and mixing (TOC, BC, and visual analysis)	X	X	X	X	X	X	5 and 6

*Performance Objectives are numbered in Table 2.
**Amendment was installed October 14-16, 2012.

Table 10. Analytical Methods.

Analysis	Method	Laboratory
Benthic Community Census	Taxonomic Identification (EcoAnalysts 2012)	EcoAnalysts
PCB congeners in tissue	USEPA 8082	USACE ERDC
Total Hg/Hg II in tissue	QS-LC-CVAF-001[1]	USACE ERDC
MeHg in tissue	QS-LC-CVAF-001[2]	USACE ERDC
Lipids in tissue	Gravimetric	USACE ERDC
PCB congeners in SPME extract	USEPA 8082	USACE ERDC
PCB congeners in sediment	USEPA 8082	USACE ERDC
Total Hg in sediment	USEPA 7473[1]	USACE ERDC (Quicksilver)[4]
MeHg in sediment	QS-LC-CVAF-001[2]	USACE ERDC (Quicksilver)
TOC in sediment	Lloyd Kahn[3]	USACE ERDC (Test America)
BC in sediment	Gustafsson et al. (2001)	USACE ERDC (Test America)
Grain size	ASTM D422-63	USACE ERDC (JTC)
Amendment placement, stability and mixing; Benthic recovery (SPI)	Sediment Profile Imagery Survey (Germano and Associates 2014)	Not applicable

[1] In the baseline event, method used was USEPA 7474.
In the 21-month event, method 1630 [GC] with USEPA protocol was used for analysis.

[2] In the 21-month event, method 1631E [CVAFS] with USEPA protocol was used for analysis.
[3] In the 3-month monitoring event, method SW-846 9060 was used for analysis.
[4] In the baseline characterization, total mercury was analyzed by ERDC (not subcontracted).

5.6.1 Dive Support

Dive support for the project was provided by the PSNS&IMF Dive Locker. Divers deployed and retrieved sampling equipment including SEA Rings, cores, and the hand-held SPI camera. The divers were equipped with SuperLite® 17 helmets (Kirby Morgan Dive Systems, Inc., Santa Maria, CA) and neoprene ½ inch wet suits with surface supplied air and warm water through an umbilical tether system from the dive boat. The dive team consisted of two divers, two tether handlers, a dive supervisor and backup, standby divers. The divers were in constant communication with the dive supervisor and scientific team with an audio communications system and an underwater video camera (UWS-3200, Outland Technology, Slidell, LA) with a light emitting diode (LED) that was either attached to the diver's helmet or hand held. The video was displayed on a monitor onboard the dive boat and the video and audio from the divers were recorded with a digital video recording (DVR) device. The direct communication with the divers was very valuable to the scientific team, as the divers were able to communicate information about sea floor conditions and provide feedback on amendment placement as well as equipment performance and sampling conditions during each monitoring event (Figure 20).

Figure 20. Diver Operations Including SPI Camera Deployment (left), Dive Prep (mid), and SEA Ring Installation (right).

The baseline sample locations were located on the site map and found by measured distances from structures on the pier. The divers staked and marked the stations with buoys below the surface. In subsequent monitoring events, the locations were located based on detailed notes of distances from the sampling location to prominent features on Pier 7 that could be more easily used by the divers to locate the station markers.

A diver survey was conducted of the amendment area on October 30-31, 2012 after installation of the amendment by divers visually surveying the area and creating a recording on video.

5.6.2 Benthic Community Census

5.6.2.1 Sample Collection

A benthic community census was conducted for the baseline characterization (2 months prior the amendment placement) and the monitoring events 10, 21 and 33 months post-remedy deployment. At each benthic community census, 10 surface sediment samples (co-located adjacent to the SEA Ring stations within the target amendment area; multi-metric stations) and 4 reference stations (outside the target amendment area; reference stations) were collected by divers. The samples were collected as described in the standard operating procedure (SOP) for benthic community census sample collection (Appendix D), maintained on ice and immediately shipped to EcoAnalysts in Moscow, ID. Samples were preserved with formalin. Sediments were sieved on 1,000 micrometer (µm) and 500 µm stacked sieves. EcoAnalysts sorted and identified macrobenthic invertebrate in the samples to the lowest possible taxonomic level of benthic invertebrates as described in the SOP for benthic community census sample taxonomy provided in Appendix D. Nematodes were not included in the evaluation of the benthic community because taxonomists included these organisms in the counts for the baseline characterization and 10-month event, but not in the 21- and 33-month events due to a change in the approach to not report nematodes in marine samples due to the inconsistency of nematodes being retained on the sieve.

5.6.2.2 Data Treatment

Benthic community census data were provided as counts per sample (by taxa) by EcoAnalysts for each sample. Six biological indices commonly used to assess benthic community health were used to evaluate the data. This includes:

- Total abundance
- Taxa richness
- Species diversity, as measured by Shannon-Wiener Diversity Index (H')
- Species evenness, as measured by the Pielou's Evenness Index (J', Pielou 1966)
- Species dominance, as measured by Swartz's Dominance Index (SDI, Swartz et al. 1985)
- Dominance of the five most abundant taxa, as measured by the percentage of total abundance comprised of the five most abundant taxa

Total abundance was calculated as the numbers of individuals divided by the sampling area in square meters (m^2). Area sampled at each station was 0.01 m^2. Taxa richness is the number of different taxa collected in each composite sample. H' is calculated as the sum of the proportion of individuals in each species to the total number of individuals in each sample (p_i) multiplied by the natural logarithm (ln) of p_i for each sample. J' is calculated as H' divided by the ln number of taxa. SDI is the minimum number of species required to account for 75 percent of individuals in a sample (Becker et al. 2011, USEPA 1987). Total abundance of the five most abundant taxa were determined for each sampling event and calculated as the number of individuals divided by the sample area (USEPA 1987). Percentage of total abundance of the five most abundant taxa were calculated as the total abundance of the five most abundant taxa divided by the total abundance overall for the sample. Statistical test procedures included t-tests, nonparametric tests, and ANOVA, with a significance level of 0.05.

5.6.3 Benthic Infaunal Succession by Sediment Profile Imagery

SPI camera images were used as a measure of benthic infaunal succession with observations for the baseline characterization and 0.5-, 10-, 21-, and 33-month post-remedy monitoring events. The SOP for the SPI survey is provided in Appendix D. Infaunal successional stages were recognized in SPI images by the presence of dense assemblages of near-surface polychaetes and/or the presence of subsurface feeding voids; both may have been present in the same image. The successional stages were based on the theory that organism-sediment interactions in fine-grained sediments follow a predictable sequence after a major seafloor perturbation (Figure 21). This is described further in Germano and Associates (2013a).

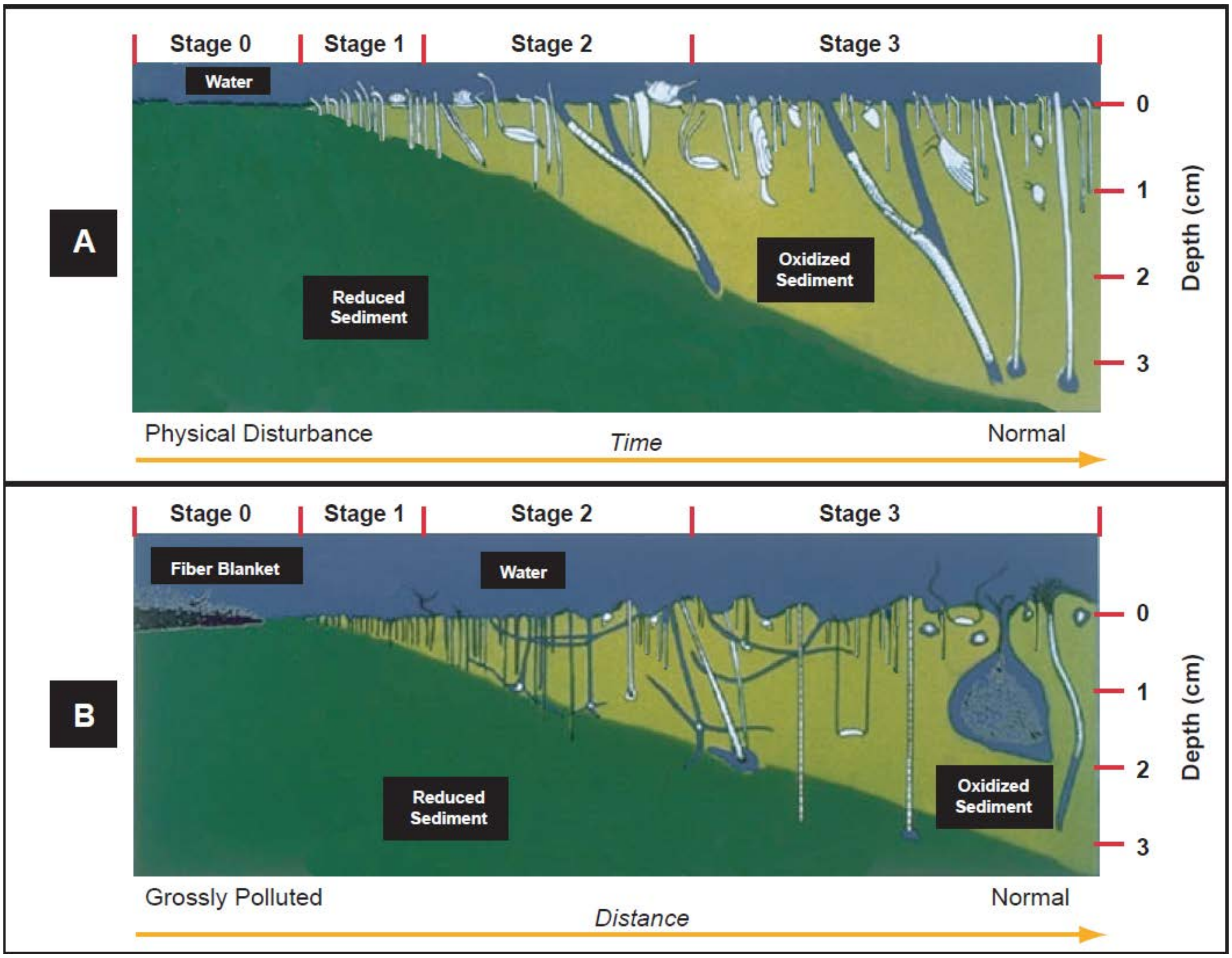


Figure 21. Stages of Infaunal Succession used in the SPI Analysis (Germano and Associates 2013a).

Additionally, maximum biological mixing depth was observed in the SPI survey images. The mixing depth via bioturbation was an important mechanism for mixing of the AC into the surface sediments. Evidence of biological activity (burrows, voids, or actual animals) were viewed in the images and the maximum biological mixing depth was determined (Germano and Associates 2013a, 2013b, 2014a, 2014b, 2015; these reports are provided in Appendix C).

5.6.4 Bioavailable Concentrations of PCBs, Mercury, and Methylmercury in Tissue

5.6.4.1 Sample Collection

Concentrations of PCBs, mercury, and methylmercury in *Nephtys caecoides* polychaete worms and *Macoma nasuta* bent-nose clam tissue were analyzed following an *in situ* 14-day exposure using SEA Ring technology (Figure 22). The SEA Ring is a patented (U.S. Patent No. 8,011,239, Figure 23), autonomous multi-chamber sampler used primarily for *in situ* toxicity and bioaccumulation testing integrated, versatile, field tested, toxicity and bioavailability assessment device (Burton et al. 2013, Rosen et al. 2012) that has successfully completed USEPA's Environmental Technology Verification (ETV) Program (Darlington et al. 2013). On deployment day, five *M. nasuta* bent-nose clams (approximately 1 inch in size) collected from a suitable reference site (Discovery Bay, Washington; J&G Gunstone Clams, Inc., Sequim, WA) were loaded into each of five replicate exposure chambers on the SEA Ring enclosed with coarse (1/2 inch stainless steel) mesh. In the remaining five chambers of the SEA Ring, a total of 25 field-collected (Dillon Beach, California, Brezina and Associates) 5-week old *N. caecoides* polychaetes were loaded into the 30 milliliter (mL) syringes (5 worms each syringe). The syringes were embedded in each of the SEA Ring chamber caps for later release into the open bottomed sediment chambers following placement at the site.

Water quality sensors (e.g. Troll 9500 [In Situ, Inc.] or HOBO [Onset Corporation]) were integrated into cores at select stations to log basic parameters including temperature, dissolved oxygen, salinity/conductivity, both inside and outside of SEA Ring chambers. Each SEA Ring was prepared for deployment while held in a 17 gallon Chemtainer (Chem-Tainer Industries, chemtainer.com) filled with site water. The container was then lowered by crane into to the water where divers removed the SEA Ring from the Chemtainer and deployed the unit on the sea floor at the desired sample location by gently inserting all the chambers into the sediment bottom until the base of the unit was flush with the sediment surface. This process provided sediment cores from the sediment surface to approximately 4 to 5 inches below the sediment-water interface. After securing the SEA Ring to the bottom with stakes and marking the station with a submerged, clearly-labeled buoy, the divers released the worms by depressing the syringe plungers.

For all surveys except the 33-month event, intact cores were also collected for exposure in the laboratory (Ramboll Environ, Port Gamble, Washington) under leveraged Project #ER-201130 as a means of comparing the *in situ* exposure results with those obtained under similar conditions in the laboratory. Laboratory exposures were conducted at stations 4-MM, 5-MM, 6-MM, and 7-MM only. Under oversight by the ER-201130 project team, these exposures were held under flow-through conditions for the same duration using ambient water pumped from Hood Canal just northwest of the entrance into Port Gamble Bay, Puget Sound (latitude 47.8578, longitude -122.5862). Water was trickled in resulting in multiple turnovers per day, and cores were also gently aerated. In some cases, organisms recovered from the laboratory intact core exposure study were used when *in situ* organisms were not recovered. Some of the challenges associated with recovery of tests organisms at the site is discussed in the Final Report for ESTCP Project #ER-201130 (Rosen et al. 2016 in prep).

Figure 22. Nephtys Caecoides Polychaete Worm and Macoma Nasuta Bent-nose Clam in Sediment Cores.

Figure 23. The SEA Ring Exposure System Used at Pier 7.

Following the 14-day exposure period, divers recovered the SEA Rings. Following an initial visual assessment of each SEA Ring, stakes were removed, polyethylene end caps were affixed to the bottom of each polychaete exposure chamber prior to removal from the sediment (clam chambers had a coarse ½ inch mesh made from thin titanium wire that did not require capping), and the device was gently lifted out of the sediment after activating the SEA Ring vacuum recovery system to prevent loss of sediment from cores. By sealing the chambers without vent holes, a vacuum is exerted to hold the substrate within the chamber during retrieval. The SEA Ring was then placed into the Chemtainer and transferred to the surface and boat crew by the divers.

Polychaetes were recovered from replicate chambers by extruding the contents onto a 500 µm stainless steel sieve and washing with seawater pumped from the site to retain the organisms. Clams were recovered from the sediment by hand. Organisms were then placed in clean seawater, depurated for 24 hours, homogenized as appropriate, and then prepared for shipping on ice, all under oversight of SSC Pacific, and project collaborators (Geosyntec/Ramboll Environ, Nautilus Environmental, and AMEC) to the analytical laboratory at United States Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC) environmental laboratory for analysis.

Upon receipt, the ERDC analytical laboratory staff kept all specimen samples frozen until they were homogenized and individual organisms were composited for each chamber for analysis of PCB congeners (USEPA 8082), mercury (QS-LC-CVAF-001, except baseline method used was USEPA 7474 and in 21-month event method was 1630 [GC] with USEPA protocol), methylmercury (QS-LC-CVAF-001, except in the 21-month event method 1631E [CVAFS] with USEPA protocol was used), and lipid content. Details associated with the SEA Ring test design are described in the Demonstration Plan associated with Project #ER-201130 and in Appendix D (SOPs). Time 0 samples (T_0, i.e. representative of tissue samples before exposure to sediment) were also analyzed. The method for organism field exposure preparation was followed as described above; however, prior to deployment a subset of organisms was set aside and frozen, then analyzed with the sediment-exposed samples. Replicate time 0 samples were analyzed if enough sample mass was available.

5.6.4.2 Data Treatment

PCB congeners were evaluated on the basis of the sum of all measured PCB congeners (total PCBs) or the sum of congeners measured in each homolog group for tri-, tetra-, penta-, and hexachlorinated biphenyl. Sums of congeners were based on detected PCBs (the concentration of congeners with a non-detect result were assumed to have a value of zero). When all congeners were below the detection limit, the detection limit for the particular sample was used. This was the case for one sample in the 10-month event and 3 samples in the 33-month event.

Concentrations of PCBs were evaluated on lw basis. Lipid content of organisms strongly influences bioaccumulation potential (Burkhard 2009), and evaluation of data on lw basis enabled a comparison of bioavailability among organisms with differing lipid contents. Lipid content has been provided in Appendix E (Tables 1a – 1e and Attachment E-1). Mercury and methylmercury were evaluated on a ww basis since mercury has partitions to organ tissue with greater affinity than lipids.

Concentrations of PCBs, Hg, and MeHg in Time 0 (T_0) tissue were evlauted for quality assurance/quality control (QA/QC) purposes. The concentrations for T_0 tissue samples represent concentrations of analytes in the organism tissue prior to exposure to field conditions. T_0 samples in some instances had detectable levels of PCB congeners and further evaluation of T_0 results have been provided in Appendix E (Attachment E-2).

For data evaluation, when multiple results (replicates) for the SEA Ring chamber tissue were available, the results were averaged by station. When SEA Ring chamber tissue results were not available due to poor sample recovery, *ex situ* laboratory results were used in the data evaluation (average of replicate results by station). Insufficient tissue recovery prevented analysis in some instances. One station in the 21-month event (1-MM) and one station in the 33-month event (7-MM) did not have sufficient *M. nasuta* tissue mass from the *in situ* SEA Ring exposure for analysis (lab exposure was not conducted for these stations and event). Four stations in the baseline event (1-MM, 2-MM, 9-MM, 10-MM), three stations in the 10-month event (2-MM, 3-MM, 8-MM), five stations in the 21-month event (1-MM, 2-MM, 3-MM, 6-MM), and four stations in the 33-month event (2-MM, 3-MM, 7-MM, 10-MM) did not have sufficient *N. caecoides* tissue mass for analysis. For data evaluation, total mercury and methylmercury were evaluated. If inorganic mercury was reported by the laboratory, inorganic mercury and methylmercury were summed to obtain total mercury. For data evaluation, when multiple results (replicates) for the SEA Ring chamber tissue were available, the results were averaged by station. Insufficient tissue recovery prevented analysis in some instances. In the 10-month event, insufficient tissue mass for *N. caecoides* was available for stations 3-, 4-, 5-, 8-MM. In the 21- and 33-month events, insufficient tissue mass for *N. caecoides* was available for station 3-MM. For data evaluation, when the concentration was not found to be above the detection limit, the concentration was assumed to be equal to the detection limit. Concentrations of Hg were not observed above detection limits for 2 *N. caecoides* tissue samples: (8-MM and 9-MM in the 21-month event). Concentrations of methylmercury were not observed above detection limits for 1 *M. nasuta* tissue sample (3-MM) and 2 *N. caecoides* tissue samples in the 21-month event.

Data often varied by several orders of magnitude and were log-normally distributed; therefore, data were Log10-transformed to improve statistical power. Statistical differences detected at the 0.05 level ($p \leq 0.05$) were considered significant. Because data often varied by several orders of magnitude and were log-normally distributed, data were Log10-transformed to improve statistical power. Statistical test procedures included t-tests, ANOVA, and nonparametric (Wilcoxon) tests on untransformed and log-transformed data. Statistical differences detected at the 0.05 level ($p \leq 0.05$) were considered significant.

5.6.5 Bioavailable Concentrations of PCBs in Sediment Porewater

5.6.5.1 Sample Collection

SPME passive samplers were deployed at each of the 10 multi-metric stations to provide a measurement of freely dissolved PCBs present in porewater of the surface sediment layer. SPMEs were in one chamber of each SEA Ring and in one core tube directly adjacent to each SEA Ring.

Each SPME sampler consisted of twelve or sixteen 12.5-cm pieces (150 or 200 cm total) of SPME

fiber (10-μm thickness polydimethylsiloxane (PDMS) coating, 210-μm silica core diameter, (Fiber-guide Industries, Stirling, New Jersey). The fibers were contained within a 110-μm stainless steel mesh envelope, cleaned with a 50:50 solution of acetonitrile:water and water rinse, and pre-loaded with performance reference compounds (PRCs) by exposing SPMEs to 80:20 methanol:water solution containing PCB-29 (Trichlorinated PRC), PCB-69 (Tetrachlorinated PRC), PCB-104 (Pentachlorinated PRC), and PCB-154 (Hexachlorinated PRC) at concentrations of 0.2 microgram (μg)/mL. The PRC PCB congeners are rare congeners which are not expected to be observed at the site. The eliminations of PRCs from the passive sampler after the exposure period are used to correct results for the percent to equilibrium achieved after the exposure period.

At each of the ten stations, one envelope was attached to one of the SEA Ring chambers and one or two were attached to a disposable plastic core tube located outside the SEA Ring chamber. When the SEA Ring and core tube were inserted into the sediment by divers, the SPME fiber was exposure to the top 0-15 cm of surface sediment. During the baseline characterization and 10-month sampling event, one envelope containing 150-cm of SPME fiber was deployed in the SEA Ring and core. For the 10-month monitoring event, 87% of measurements in porewater were not detectable. Therefore, in the 21- and 33-month events, 200-cm of SPME fiber were deployed in the SEA Ring chamber at each multi-metric station and 400-cm were deployed in the core tube adjacent to the SEA Ring at each multi-metric station. Although the divers attempted to insert the entire length of the SPME sampler into the sediment, this was difficult due to the sediment strata, shell hash, lack of visibility, etc. SPMEs were retrieved by divers with the SEA Rings after 14 days.

Upon recovery, envelopes containing SPMEs were individually wrapped in aluminum foil, placed in plastic bags, and stored at 4 degrees (°) Celsius (C) until they were shipped to the SSC Pacific laboratory. The bags were stored at 4°C until they were processed (within 2 weeks). The SPME fibers were removed from the envelope, wiped with a moist tissue, cut into small pieces, placed in a 2-mL vial, and submerged in 1.8 mL hexane. The vials were then shipped to the analytical laboratory where the vials were then stored at 4°C for several days, spiked with external surrogates (PCB-34, PCB-165, and PCB-209 in the baseline and PCB-209 in subsequent monitoring events), evaporated to a volume of approximately 100 or 200 μL with pure nitrogen, and analyzed for PCB congeners consistent with USEPA Method 8082. In addition to SPME fibers exposed to sediment, trip and fridge blanks were also shipped to the site and extracted to provide initial concentrations of PRCs in the fiber that was not exposed to sediment. The SOP for passive sampling by SPME is provided in Appendix D. *In situ* measurement of PCBs in sediment porewater will be performed by the following procedure, adapted from You et al. (2007), Yang et al. (2008), Lu et al. (2011), Oen et al. (2011), and Harwood et al. (2012). One field duplicate was deployed with each event.

5.6.5.2 Data Treatment

The concentrations of freely dissolved total PCBs in sediment porewater were expressed by summing detected tetra-, penta-, and hexachlorobiphenyl congeners (congeners from other homolog groups were not detected). If no congeners were detected, the maximum detection limit of the PCBs for the sample was used. The concentrations by homolog were also expressed as the sum of the detected congeners and if no congeners were detected, the maximum detection limit was used. Regression on statistics was used in statistical evaluation of non-detect concentrations for total PCBs and homolog groups.

The concentrations in trip and fridge blanks were treated as the initial concentration of PRCs in the PDMS and were used to adjust the PCBs measured in sediment-exposed SPME to steady state concentrations. This was accomplished by first calculating correction factors for each of the PRCs in each fiber (Oen et al. 2011) as inferred by the percentage of steady state reached. Log10-transformed correction factors were regressed on their respective PDMS-water partition coefficients (Smedes et al. 2009) for the four PRCs, and the resulting model was used to calculate correction factors for each of the PCB congeners absorbed by the fibers exposed to sediment using PDMS-water partition coefficients. These correction factors were multiplied by the measured concentration of PCBs in the PDMS of fibers exposed to the sediment and divided by the respective PDMS-water partition coefficient to calculate the concentration of freely-dissolved PCBs in sediment porewater (Appendix F).

At many of the stations, only a portion of the SPME was exposed to the sediment, with the remainder exposed to the sediment-water interface and overlying water. Upon retrieval of the SPMEs core tubes and SEA Rings, the proportion of the SPME envelope buried in the sediment was recorded. On average, 67%, 60% 62%, 63% of the envelopes were below the sediment surface in the baseline, 10-, 21-, and 33-month sampling events, respectively. It was assumed that PCBs were absorbed into the fiber from direct contact with the sediment. Some experiments have suggested that concentrations of PCBs in near-sediment overlying water are similar to that of sediment porewater (Booij et al. 2003). A sensitivity analysis corrected the values to account for partial submersion in the surface sediment and did not result in different conclusions. For example, concentrations of freely-dissolved PCBs in the baseline were significantly different from those measured in the 10-month investigation using either uncorrected or corrected values, or the magnitude of the difference between baseline and 10-month data was nearly identical (5% difference). Therefore, results and conclusions are based on the uncorrected values.

Statistical comparisons of data collected were made using pooled t-tests or nonparametric tests depending on the normality of the data and heterogeneity of variance. Because data often varied by several orders of magnitude and were log-normally distributed, data were Log10-transformed to improve statistical power. Statistical differences detected at the 0.05 level ($p \leq 0.05$) were considered significant.

5.6.6 Concentrations of PCBs, Mercury, and Methylmercury in Sediment and Grain Size

5.6.6.1 Sample Collection

Core samples were obtained during the baseline characterization, 10-, 21-, and 33-month post amendment placement monitoring events for analysis of surface sediment samples (0 to 15 cm below the sediment-water interface). Samples were collected and processed in general accordance with ASTM 1391 (ASTM International 2008). Divers carried core tubes and caps to the sediment surface. The core tubes were 2 feet in length, marked with yellow or white electrical tape to a target depth of penetration (1 foot) and an up arrow. The core tube was pushed into the sediment surface to the target depth. If refusal was met, a location immediately adjacent was found. The top of the core was capped and the core was pulled out of the sediments, retaining the sample within the core tube, and the bottom of the core was capped. The sample in the core tube was then brought to the surface for processing (maintained at 4°C until processing). If the core length retrieved exceeded the target core length of 15 cm, the deeper sediments were discarded. Cores were recollected if

unacceptable core length was retrieved. The sediment sample was homogenized, placed in sample containers, and stored at 4°C until analysis. The sediment samples were analyzed for PCB congeners by USEPA 8082, mercury by USEPA 7473 (combustion/gold-amalgamation/CVAA, in the baseline USEPA 7474 was used; in the 21-month event method 1630 [GC] with USEPA protocol was used) and methylmercury by QS-LC-CVAF-001 (in the 21-month event method 1631E [CVAFS] with USEPA protocol was used). An additional core was collected for grain size analysis by ASTM D422-63. The sediment samples were shipped to ERDC for analysis.

5.6.6.2 Data Treatment

Large shell fragments were removed from the samples by the field and laboratory personnel. For PCB analysis, in the 10-month, 21-month, and 33-month events, the laboratory determined the percent debris in the samples by wet sieving (#10 [2 mm]) to remove debris such as shell hash, aggregate and cobble. Concentrations of PCB congeners were then corrected for debris content. For mercury and methylmercury analyses, fragments of shell and rock were avoided by the analytical laboratory, although not completely removed from the samples. The analytical laboratory also homogenized the sample prior to subsampling an aliquot for analysis. Statistical test procedures included ANOVA, t-tests, and nonparametric (Wilcoxon) tests on untransformed and log-transformed data. Statistical differences detected at the 0.05 level ($p \leq 0.05$) were considered significant.

5.6.7 Sediment Profile Image Survey

The SPI survey was used to monitor amendment thickness and mixing and provide information on sediment characteristics including buried organic-rich horizons, baseline depth, extent of biological mixing, and large-scale variations in sediment grain size that may indicate significant variations in energy regime and successional stage. SPI surveys were conducted from a boat using a frame mounted camera or by hand using divers (under pier) at 42-51 locations within and adjacent to the target area. 42 locations were observed in the baseline and 0.5-month events. In the 10- and 21-month events, 50 stations (8 additional stations added to the 42 existing stations) were observed. In the 33-month event one additional station was added for a total of 51 stations. Also, during the 10-, 21-, and 33-month sampling events the SPI transect 3 was moved about 20 feet to the west to avoid the sand blanket and gravel armoring that had been placed around the pilings following completion of the fender piling replacement project. Information from SPI surveys also provided information on the depth of sediment mixing via bioturbation. The detailed SOP is provided in Appendix D. Deployment and operation of the SPI camera system is shown in Figure 24. The central cradle of the camera is held in the “up” position by tension on the winch wire as it is being lowered to the seafloor (left); once the frame base hits the bottom (center), the prism is then free to penetrate the bottom (right) and take the photograph (Germano and Associates, 2013a).

While replicate images were taken at each station, the amount of debris, cobble, and disturbance caused by the diver-deployed system did not allow for reliable measurements of precision between replicate images, so only one replicate (the least disturbed) from each station sampled by divers was analyzed. The amount of debris, shell hash, and gravel placed during the piling removal project that was present in and around the piers created high variation in the penetration depth at the crane deployed stations, with cross-sectional sedimentary structures masked or destroyed by debris (natural or anthropogenic) being dragged down by the prism cutting blade. Given the

variation in image feature preservation (regardless of whether they were taken with the crane- or diver-deployed system), and because this variation in cross-sectional structural appearance was not really indicative of natural variance in the measured parameters, the best image (least disturbed) from each station was used for the analysis.

The SPI survey was used to detect the thickness of AC layer. Representative sediment profile images of the upper 8 cm of sediment at a SPI station located between SEA Ring stations 2 and 3 obtained during the baseline (a), 0.5-month (b), and 10- month (c) surveys are shown in Figure 25 (width of each image is 14.5 cm).

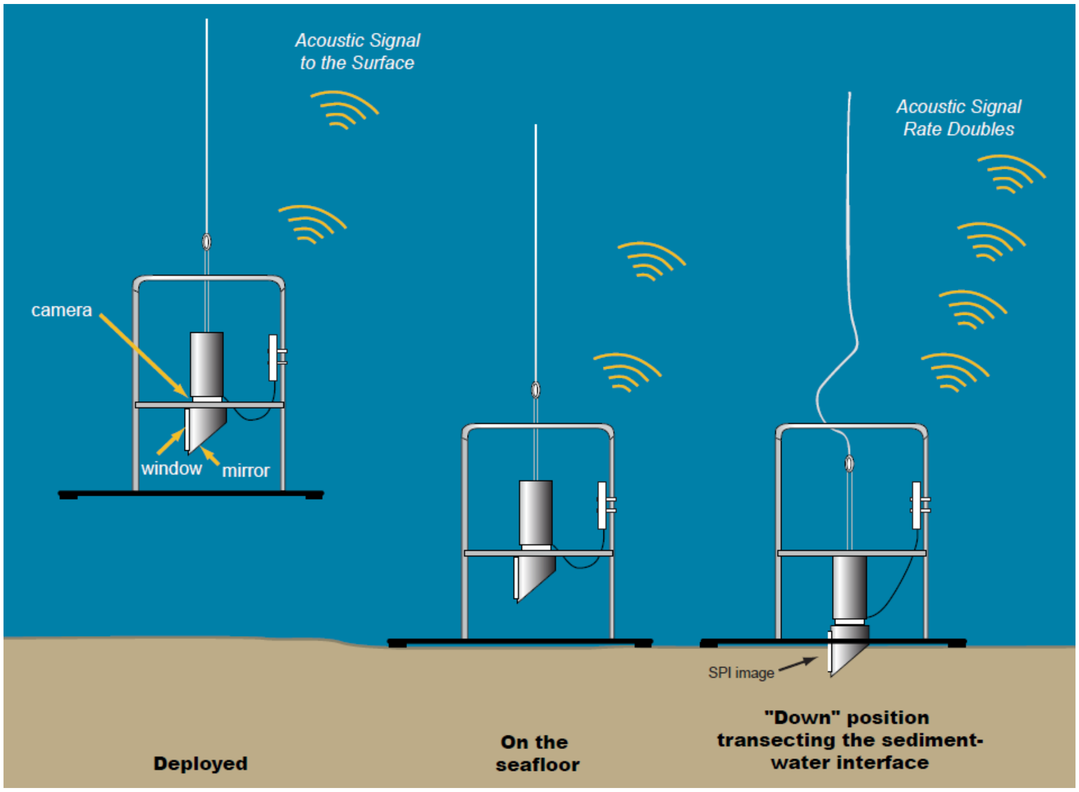


Figure 24. Typical Deployment of the Frame-mounted SPI Camera from a Surface Vessel (Germano and Associates 2013a).

The SPI system can measure depositional layers ranging in thickness from 1 mm to 20 cm (the height of the SPI optical window). During image analysis, the thickness of the newly deposited sedimentary layers was determined by measuring the distance between the pre- and post-placement sediment-water interface. Recently deposited material was usually evident because of its unique optical reflectance and/or color relative to the underlying material representing the pre-disposal surface. Also, in most cases, the point of contact between the two layers was clearly visible as a textural change in sediment composition, facilitating measurement of the thickness of the newly deposited layer. It was expected that natural depositional processes and bioturbation of the sediments by the resident infauna will mask the signature of this depositional layer over time (Germano and Associates 2013a).

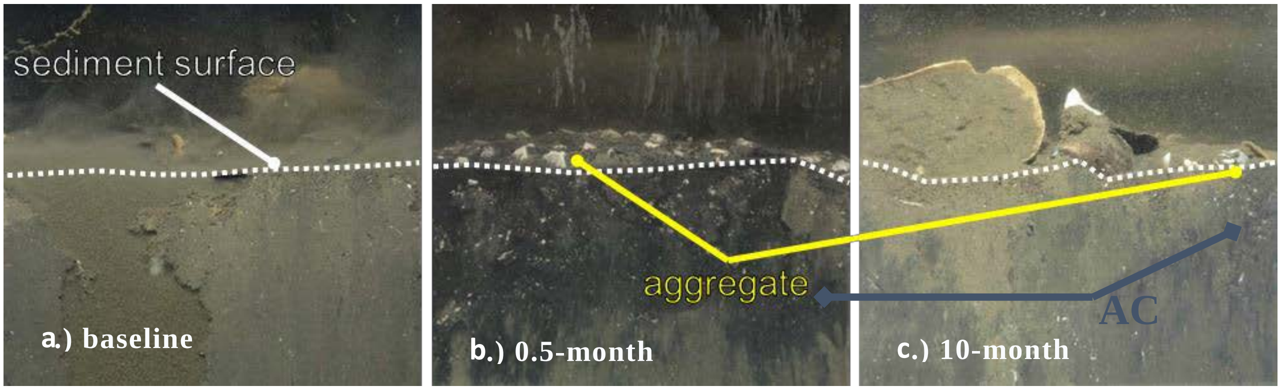


Figure 25. Representative Sediment Profile Images for the Baseline, 0.5-, and 10-month Events.

5.6.8 Core Collection for TOC, BC, and Visual Analysis

5.6.8.1 Sample Collection

Core samples for TOC, BC, and visual analysis were obtained in the baseline characterization, 0.5-, 3-, 10-, 21-, and 33-month post amendment placement monitoring events for analysis of surface sediment samples (0 to 15 cm below the sediment-water interface). Samples were collected in general accordance with ASTM 1391 (ASTM 2008). Divers carried core tubes (2 feet in length, marked to target depth of penetration [1 foot] with up arrow) and caps to the sediment surface. The core tube was penetrated into the sediment surface to the target depth. If refusal was met, an immediately adjacent location was found. The top of the core was capped and the core was pulled out of the sediments, retaining the sample within the core tube, and the bottom of the core was capped. The sample in the core tube was then brought to the surface for processing (maintained at 4°C until processing). Cores were split lengthwise in order to obtain samples of the sediment layers at 0-5 cm, 5-10 cm, and 10-15 cm below the sediment-water interface following removal of large (> 0.5 cm) debris and aggregate. Samples of the 3 intervals per sampling location were analyzed for TOC and BC. Samples were stored at 4°C until analysis. At the 10, 21, and 33-month investigations, intervals were also inspected visually during sample collection, and aggregate presence or absence was noted.

Undisturbed sediment was collected with core tubes (surface sediment from 0 to 15 cm from sediment-water interface) at the 10 multi-metric stations. Core sampling was conducted with a diver deployment and retrieval (core tubes were 2 feet in length, penetrated to target depth of 1 foot, and had an inside diameter of 4.8 cm). The cores were sectioned into three 5-cm intervals (0-5 cm, 5-10 cm, and 10-15 cm below sediment-water interface) for visual analysis as well as TOC and BC analyses. The cores were visually examined to evaluate reactive amendment presence, depth, and mixing. The intervals were homogenized, placed in sample container, and shipped to analytical laboratory (maintained at 4°C). One field duplicate was obtained (not obtained in 0.5- and 3-month events). During all investigations (baseline, 0.5-month, 3-, 10-, 21- and 33-months post placement), sediment samples were analyzed for TOC by Lloyd Khan method, except the 3-month sampling event where TOC was analyzed by SW-846 9060. BC was analyzed by Lloyd Khan method (Gustafsson et al. 2001). These methods are provided in Appendix D. Upon receipt at

analytical laboratory, sediments were air dried and then sieved (#10 sieve [2 mm]). In the 21-month event, samples were wet sieved and washings were allowed to settle overnight. The resulting supernatant was decanted with the retained sediment transferred back to the original sample container and dried at least overnight at 70°C. Once dry, the sample container was capped and the sample returned to the sample custodian for shipment to the subcontracting laboratory.

5.6.8.2 Data Treatment

Statistical test procedures included distribution fit testing, t-tests, ANOVA and nonparametric test with a significance level of 0.05 were performed to evaluate the results.

5.7 SAMPLING RESULTS

5.7.1 Performance Objectives (2.) and (3.): Demonstrate Amendment Associated Reduction in Contaminant Bioavailability in the Field and Reductions Are Sustained Over Time

5.7.1.1 In Situ Bioaccumulation

The concentrations of PCBs, mercury, and methylmercury in tissue from *in situ* bioaccumulation are provided in Appendix E. In Appendix E, Table1a summaries concentrations on a lipid weight and wet weight basis. Tables 1b, 1c, 1d, and 1e present the results as provided by the analytical laboratory for the baseline, 10-, 21-, and 33-month events, respectively. Tables 2 and 3 provide summaries of the total Hg and MeHg concentrations in tissue, respectively.

5.7.1.1.1 Concentrations of PCBs in Tissue on a Lipid Weight Basis

Concentrations of total PCBs on a lipid weight basis in *M. nasuta* tissue significantly decreased from the baseline characterization to the 21- and 33-month monitoring events (an average of 82% and 88% for lw basis, respectively) as shown in Figure 26 (error bars are 1.5 times the interquartile range [IQR]), differing letters indicate significant differences, results provided in tabular format in Appendix E Table 1.a.). Concentrations in the 10-month monitoring event decreased an average 68% from the baseline in *M. nasuta* tissues (results were provided in nanogram [ng] per gram [g], lw basis). Target tissue levels for protection of aquatic life are 1,400 ng total PCB Aroclors/g, lw (USACE et al. 2009). In the baseline, concentrations of total PCB congeners in *M. nasuta* tissue were on average 814 ng/g, lw and in the 33-month event, concentrations were on average 99 ng total PCB congeners/g, lw.

As shown in Figure 27 (error bars are 95% confidence levels), concentrations of trichlorinated biphenyls (tri-CBs) in *M. nasuta* tissue increased from the baseline to the 10-month event and decreased from baseline in the 21- and 33-month events; however, no significant difference between baseline characterization and subsequent monitoring events was observed. Concentrations of tetrachlorinated biphenyls (tetra-CBs) and pentachlorinated biphenyls (penta-CBs) in *M. nasuta* tissue significantly decreased from baseline in the 10-, 21- and 33-month events (ranging from an average of 71% to 94% on lw basis). A significant decrease in hexachlorinated biphenyls (hexa-CBs) in *M. nasuta* tissue was observed from baseline in the 10-month event (86%); however, decreases in the 21- and 33-month events were not significant (46-49%).

Concentrations of total PCBs in *N. caecoides* tissue significantly decreased from the baseline characterization to the 10-, 21-, and 33-month monitoring events (an average of 87%, 89% and 97% on lw basis, respectively) as shown in Figure 28 (error bars are 1.5 times the IQR, results provided in tabular format in Appendix E Table 1.a.). Target tissue levels for protection of aquatic life are 1,400 ng total PCB Aroclors/kg, lw (USACE et al. 2009). In the baseline, concentrations of total PCB congeners in *N. caecoides* tissue were on average 2,120 ng/g, lw and in the 33-month event, concentrations of total PCBs were on average 66 ng/g, lw.

As shown in Figure 29 (error bars are 95% confidence levels), concentrations of tri-CBs in *N. caecoides* tissue had no significant difference from the baseline to the 10- and 21-month event (an increase of 226% from baseline to 10-month and a decrease of 44% from baseline to 21-month, on average). In the 33-month events, tri-CBs in polychaete tissue were significantly lower than the baseline concentrations (77%). Concentrations of tetra-CBs and penta-CBs in *N. caecoides* tissue significantly decreased from the baseline characterization in the 10-, 21- and 33-month events (range of average decrease was from 87% to 98%). Concentrations of hexa-CBs in worm tissue significantly decreased from the baseline characterization in the 10- and 33-month events (88% and 89%, respectively); however, decreases observed in the 21-month events were not significant (79% lower than the baseline).

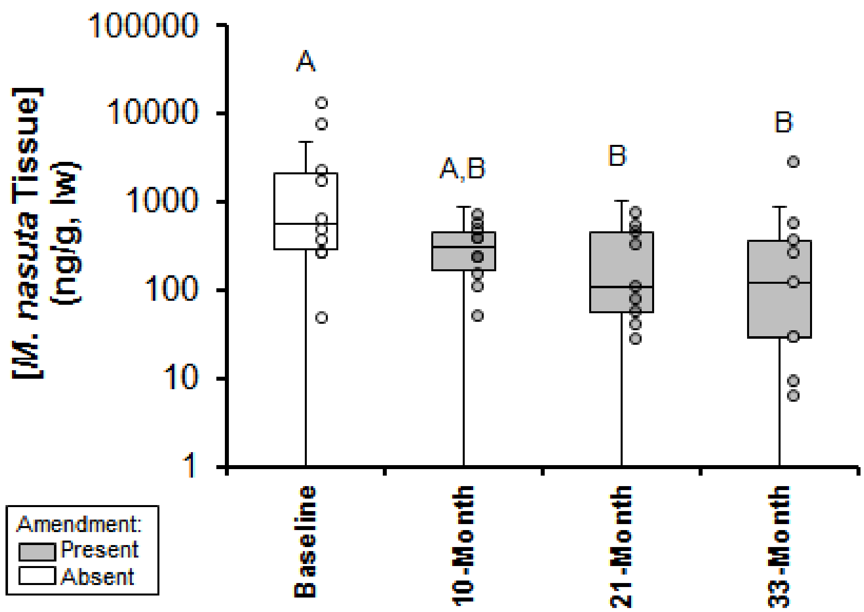


Figure 26. Concentrations of Total PCBs in *Macoma nasuta* Tissue (ng/g, lw). *Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

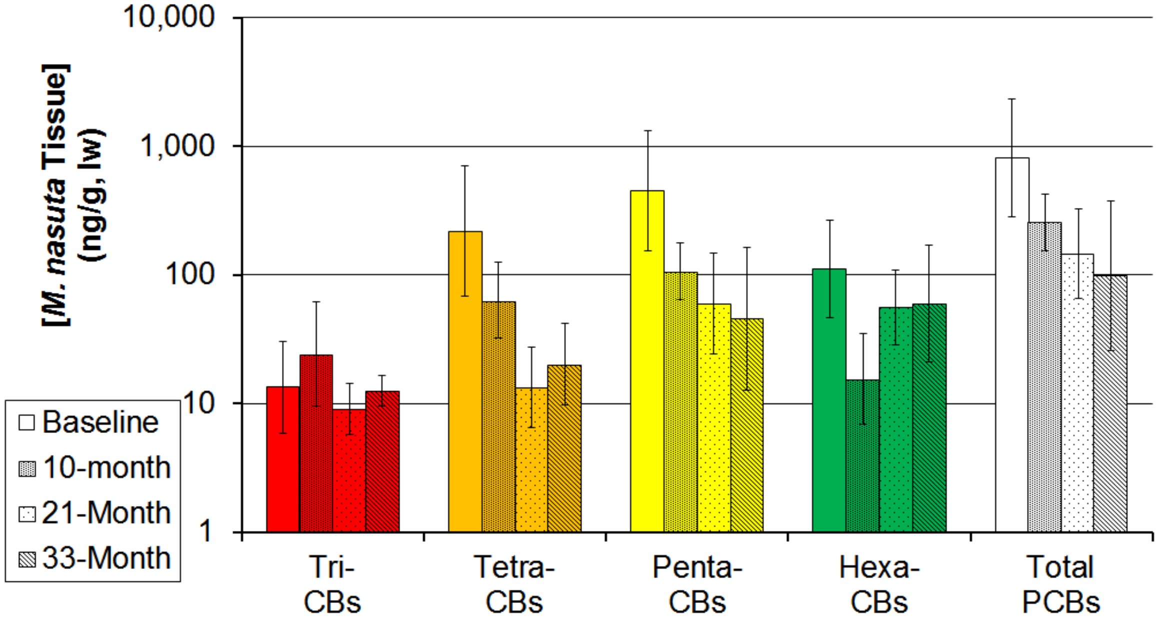


Figure 27. Concentrations of PCBs in *Macoma nasuta* Tissue (ng/g, lw). *Results are shown as mean ± 95% CL.*

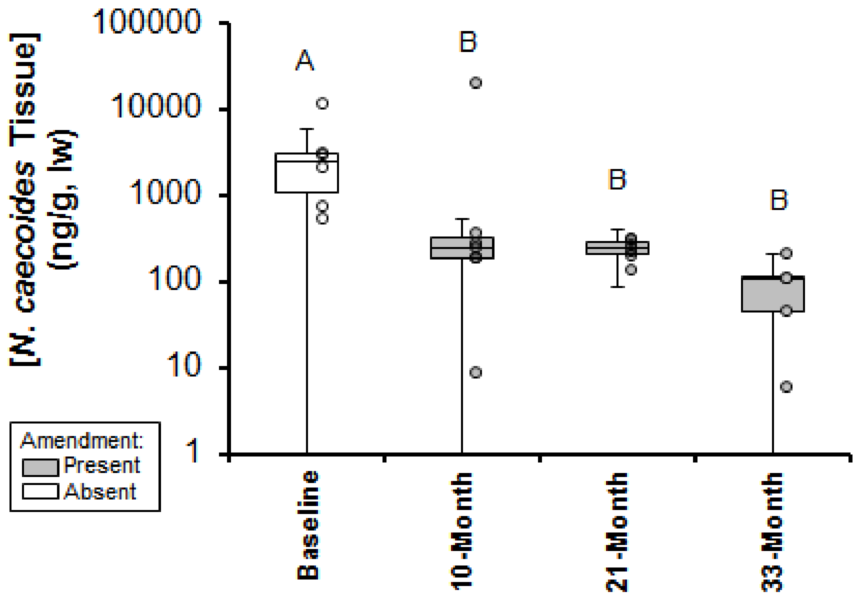


Figure 28. Concentrations of total PCBs in *Nephtys caecoides* Tissue (ng/g, lw). *Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

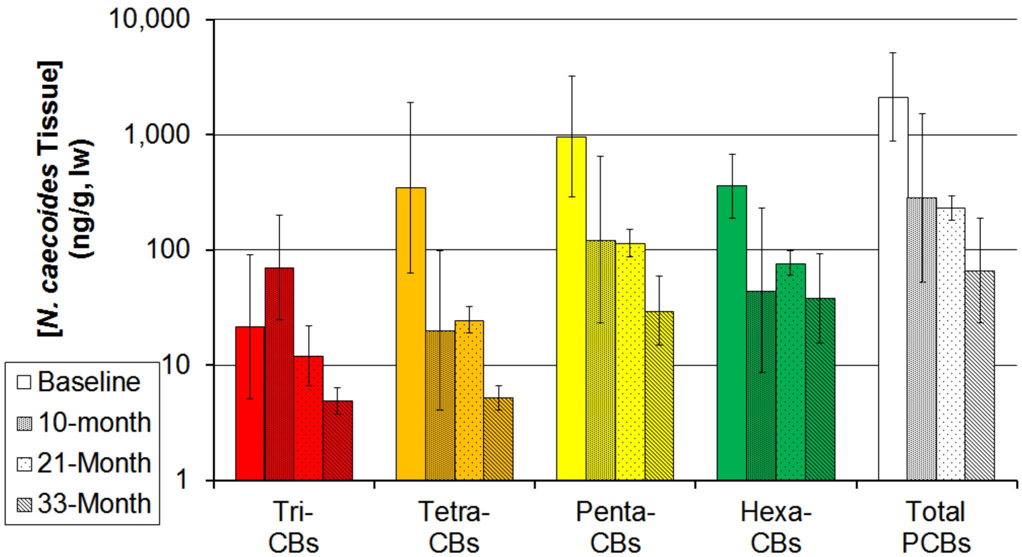


Figure 29. Concentrations of PCBs in Nephtys caecoides Tissue (ng/g, lw).

Results are shown as mean ± 95% CL.

5.7.1.1.2 Concentrations of Total Mercury in Tissue

Concentrations of total Hg in *M. nasuta* tissue were not significantly different from the baseline characterization to the 10- and 21-month monitoring event (an average of 4% and 27% decrease) as shown in (Figure 30, results provided in tabular format in Appendix E Table 2). However, concentrations were significantly lower in the 33-month event than the baseline (average decreases of 41%).

Analytical methods for total Hg analysis were not the same in each sampling event. In the baseline, ERDC analyzed the samples using USEPA 7474; in the 10-month event, QuickSilver analyzed the samples using QS-LC-CVAF-001; in the 21-month event, Test America analyzed the samples using method 1630 (GC) with USEPA protocol; and in the 33-month event, QuickSilver analyzed with method QS-LC-CVAF-001. The difference in analytical laboratories and methods may be contributed to differences in concentrations in tissue between events.

The target tissue level for protection of aquatic life as referenced from the *Sediment Evaluation Framework for the Pacific Northwest* is 110 ng/g, ww (species sensitivity derived distribution, USACE et al. 2009). In all events, concentrations of total mercury in *M. nasuta* tissue were below this threshold. Additionally, baseline and post-remedy concentrations of total mercury were within a factor of 1 to 2 compared of ambient/natural concentrations, as measured in *M. nasuta* samples collected from an uncontaminated area (Amirbahman et al. 2013). Overall, potential differences in total mercury in *M. nasuta* tissue among the monitoring events likely represent temporal or natural organism variations and do not indicate the amendment has a measureable effect on total mercury bioavailability. This does not necessarily indicate activated carbon would be ineffectual in reducing total mercury bioavailability in sediments, because it is possible that reductions in bioavailability would be more measurable if baseline levels were greatly elevated above background levels.

Concentrations of total mercury in *N. caecoides* tissue were not significantly different from the baseline characterization to the 33-month monitoring event (an average of 24% decrease) as shown in Figure 31, results provided in tabular format in Appendix E Table 2). Concentrations of total mercury in *N. caecoides* tissue significantly increased from the baseline in the 10-month event (an average increase of 225%) and significantly decreased in the 21-month event (average decrease of 66%). As discussed above, the analytical laboratory and method of analysis for total Hg between the baseline and monitoring events varied.

The target tissue level for protection of aquatic life referenced from the *Sediment Evaluation Framework for the Pacific Northwest* is 110 ng/g, ww (USACE et al. 2009). In all monitoring events, concentrations of total mercury in *N.caecoides* tissue were below this threshold. With the exception of the 10-month data, which appeared to be unusually high compared to the rest of the data, baseline and post-remedy concentrations of total mercury were equivalent compared to ambient concentrations in wild *Nephtys* sp. collected in an uncontaminated area (Sunderland et al. 2004). Overall, potential differences in total mercury in among the monitoring events likely represent temporal or natural organism variations and do not indicate the amendment has a measureable effect on total mercury bioavailability (especially because the somewhat higher results from the 2 samples in the 10-month event were not sustained in the latter events). This does not necessarily indicate that activated carbon would be ineffectual in reducing total mercury bioavailability in sediments, because it is possible that reductions in bioavailability would be more measureable if baseline levels were greatly elevated above background levels.

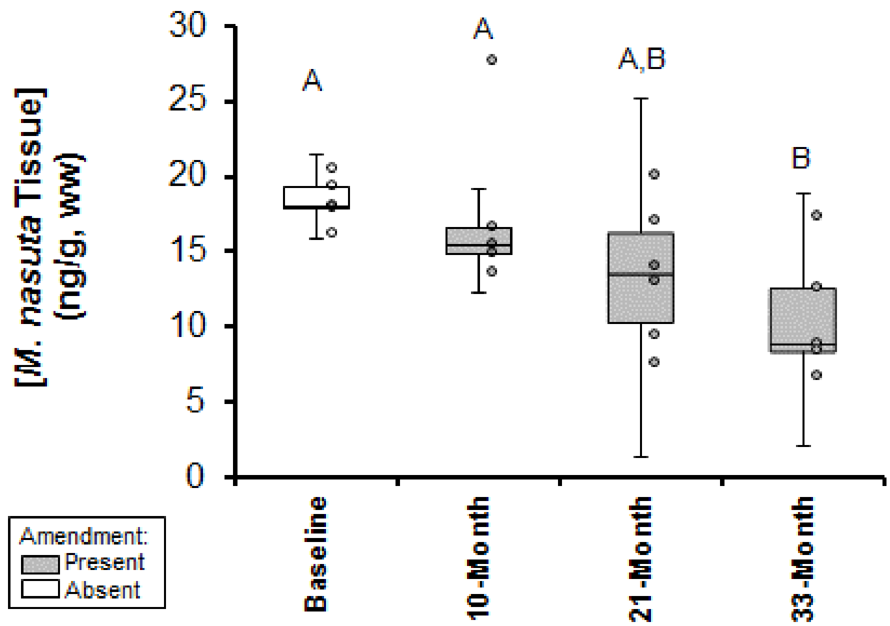


Figure 30. Concentrations of Total Mercury in Macoma nasuta Tissue (ng/g, ww).

Events not connected by the same letter are significantly different (p ≤ 0.05). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

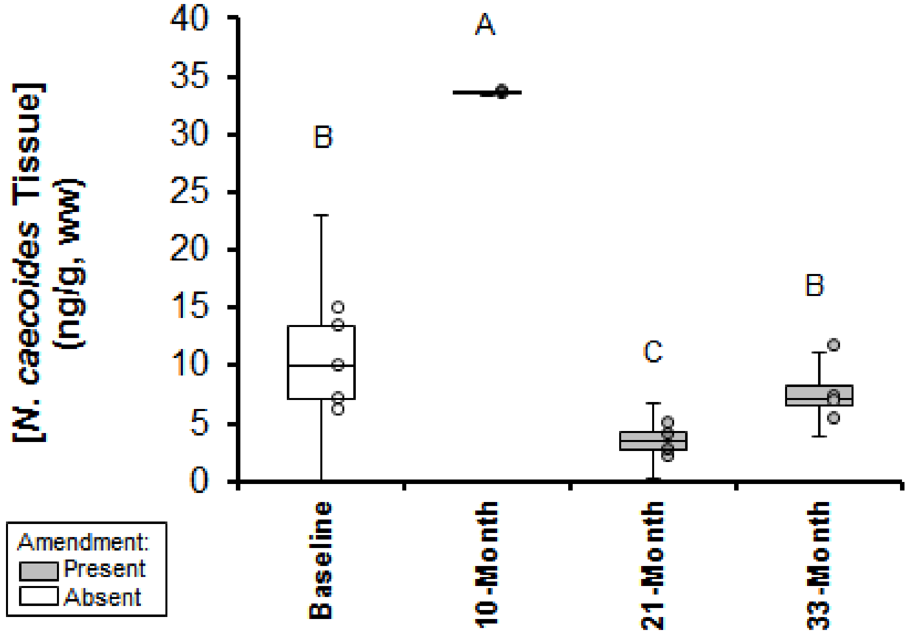


Figure 31. Concentrations of Total Mercury in Nephtys Caecoides Tissue (ng/g, ww).

Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

5.7.1.1.3 Concentrations of Methlymercury in Tissue

Concentrations of methylmercury in *M. nasuta* tissue were not significantly different from the baseline characterization to the 10-month monitoring event (an average of 23% decrease) as shown in (Figure 32, Appendix E Table 3). In the 21- and 33-month events, concentrations were reduced an average of 71% and 53% from the baseline, respectively.

Concentrations of methylmercury in *N. caecoides* tissue were not significantly different from the baseline characterization to the 10-month monitoring event (an average decrease of 68%) as shown in Figure 33 (results provided in tabular format in Appendix E Table 3). Concentrations of methylermcury in *N. caecoides* tissue significantly decreased from the baseline to the 21- and 33-month events (an average decrease of 92% and 70%, respectively).

Concentrations of methylmercury in both invertebrate tissues were well below the 300 ng/g, ww human health-based threshold for consumption of fish and aquatic invertebrates (USEPA 2010). Additionally, baseline and post-remedy concentrations of methylmercury were within a factor of 1 to 3 compared of natural ambient concentrations, as measured in *M. nasuta* samples collected from an uncontaminated area (Amirbahman et al. 2013). Overall, the lack of difference in concentrations of methylmercury among the monitoring events are likely to represent temporal or natural organism variations and do not indicate the amendment has a measureable effect on methylmercury bioavailability. This does not necessarily indicate activated carbon would be ineffectual in reducing methylmercury bioavailability in sediments, because it is possible that reductions in bioavailability would be more measureable if baseline levels were greatly elevated above background levels.

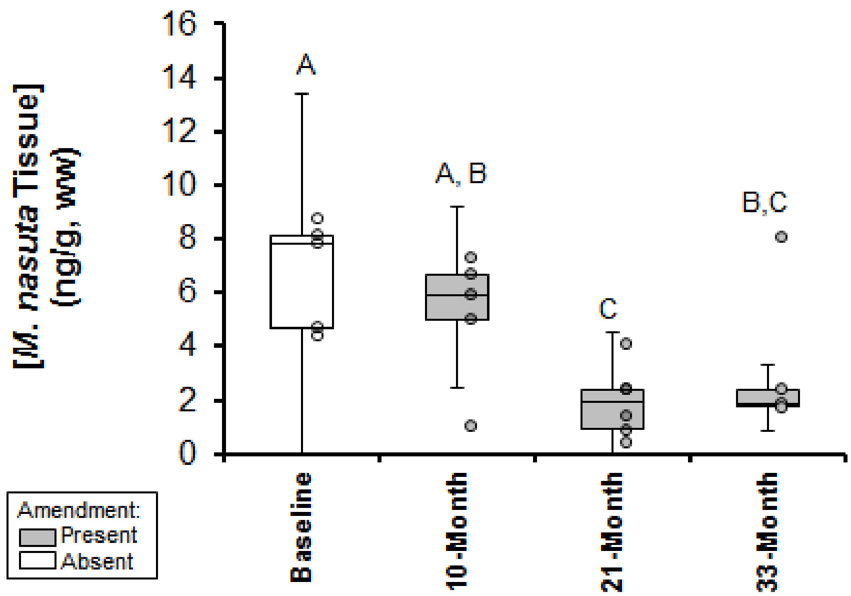


Figure 32. Concentrations of Methylmercury in *Macoma Nasuta* Tissue (ng/g, ww). *Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

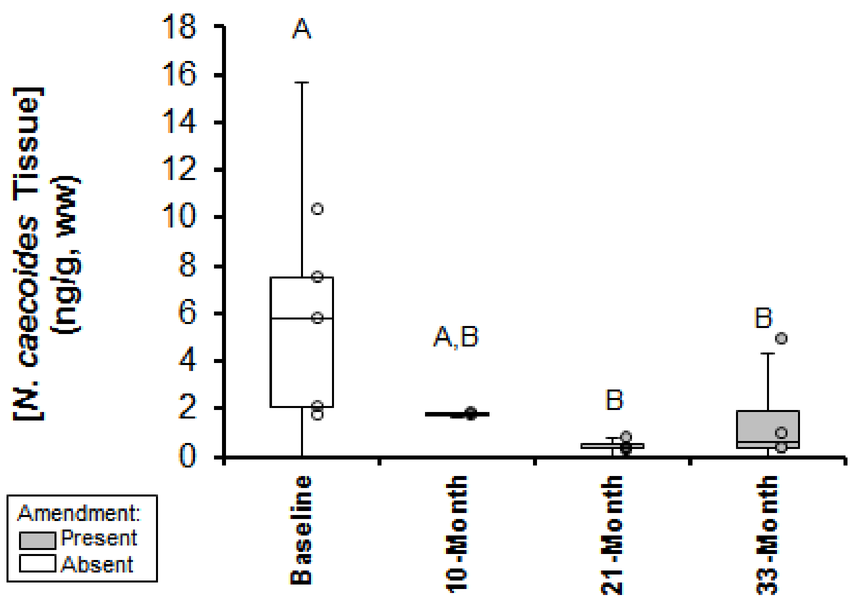


Figure 33. Concentrations of Methylmercury in Nephtys Caecoides Tissue (ng/g, ww).

Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

5.7.1.2 In Situ Passive Sampling

5.7.1.2.1 Concentrations of PCBs in Porewater

Concentrations of PCBs in sediment porewater were measured in the baseline characterization and 10-, 21-, and 33-month monitoring events. Results and calculations are provided in detail in Appendix F and a summary of these results is provided here. Concentrations of total PCBs freely dissolved in porewater were significantly decreased from the baseline characterization to the 10-, 21-, and 33-month monitoring events (an average of 75%, 86%, and 81% decreases were observed, respectively) as shown in Figure 34 (error bars are 1.5 times IQR, results provided in tabular format in Appendix F).

As shown in Figure 35 (error bars are 95% confidence levels, not detected [ND]), concentrations of tetra-CBs and penta-CBs in sediment porewater significantly decreased from the baseline characterization to the 10-, 21-, and 33-month events (ranging from an average of 59% to 97%). No significant difference was observed in concentrations of hexa-CBs freely dissolved in porewater from the baseline to all monitoring events (ranging on an average from a decrease of 30% to an increase of 33%).

Note that Tri-CBs were not detected in porewater. Despite increasing the volume of PDMS beginning in the 21-month event and achieving an average detection limit for tri-CBs of 0.05 ng/L, detection limits were not sufficiently low to detect TriCBs. Detection limits for tri-CBs in this study were generally comparable to other studies, particularly when considering the type of polymer used (i.e., PE has a greater absorptive capacity than PDMS). Tri-CBs were detected in sediment samples at low concentrations (site average of ~1 ug/kg [including NDs]). Also, the frequency of detection in sediment was low (17% of results above reporting limit). With low concentrations of Tri-CBs in the baseline, concentrations in porewater and tissues continued to be low after reductions were observed due to the amendment. Tri-CBs were detected in tissue samples with a low frequency of detection above the reporting limit (2%, 2% 0.6%, and 0% analytical results in the baseline, 10-, 21-, and 33-month events, respectively).

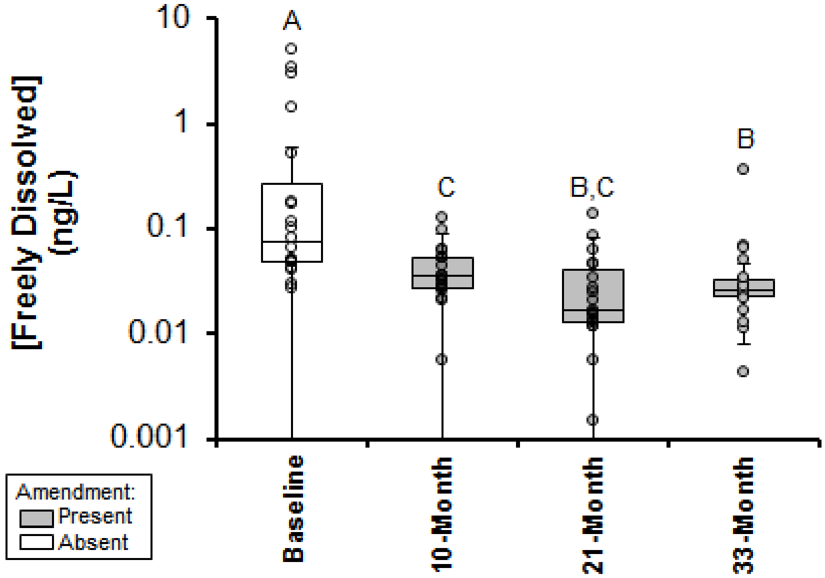


Figure 34. Concentrations of Total PCBs Freely Dissolved in Porewater (ng/L).

Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

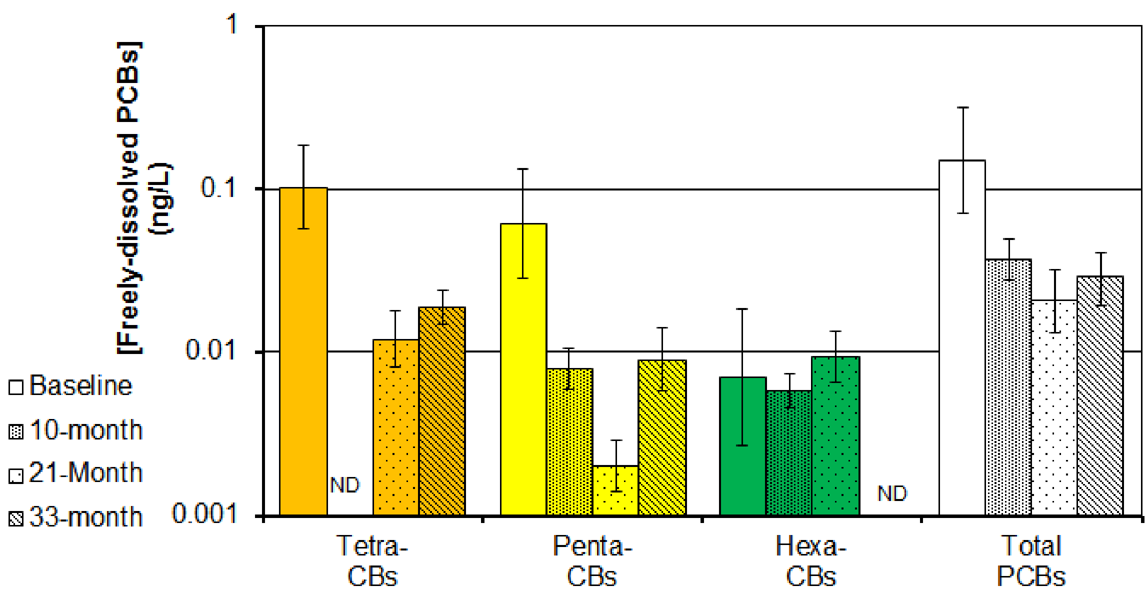


Figure 35. Concentrations of PCBs Freely Dissolved in Porewater (ng/L). *Results are shown as mean ± 95% CL.*

5.7.1.3 Concentrations of PCBs, Total Mercury, and Methylmercury in Sediment and Grain Size

The results for concentrations of PCBs, total mercury, and methylmercury in sediment as well as grain size are detailed in Appendix G. These measurements were made in the baseline characterization and 10-, 21-, and 33-month post-placement monitoring events.

5.7.1.3.1 Concentrations of PCBs in Bulk Sediment

The concentrations of PCBs in bulk (unsieved) sediment are summarized in Table 11. Concentrations were lower in the 10-, 21-, and 33-month events compared to the baseline for all homolog groups and total PCBs (Figure 36). Elevated concentrations in the baseline may be due in part to many samples contained large amounts of shell hash, cobble, and aggregate (for the post-placement samples). The concentrations were corrected for percent solids and percent debris below. A decrease in PCB sediment concentrations was observed in the lab treatability study as well. While the cause of this decrease is not fully understood, there is evidence in the literature that concentrations of both PCBs and PAHs are lower in sediments treated with powdered AC as compared to the unamended sediments (Kupryianchyk et al. 2013). This could be explained by a decrease in the ability to extract the PCBs from the sediments treated with the AC due to binding of PCBs to the AC particles.

As shown in Figure 37 (results provided in tabular format in Appendix G), concentrations of total PCBs in bulk sediment in the 33-month event were not significantly different than concentrations in the baseline (average decrease of 56%). However, concentrations of total PCBs in bulk were significantly lower in the 10- and 21-month events than the baseline (average of 80% and 71%, respectively). The reason for the initial decrease of PCB concentrations observed for the 10-month event is not fully understood. The reduction could have been caused by, inhomogeneity of sediments at the site, dilution from the amendment, and/or the difficulty in extracting PCBs bound to sediments treated with the AC due to irreversible binding of PCBs to the carbon particles as was observed during the treatability study and reported by other studies (Kupryianchyk et al. 2013). Total PCB concentrations measured in samples from Pier 7 during this study were within the range concentrations of total PCB on a dry weight basis reported from long term sediment monitoring within OU B Marine in 2014 (average 41 ng/g dw, range 15-120 ng/g dw) and Sinclair Inlet (average 17 ng/g dw, range 2.1-82 ng/g dw; and 750 ng/g OC dw, range 330-1286 ng/g OC dw) (US Navy 2015a).

Table 11. Concentrations of PCBs in Bulk Sediment.

Event	Concentration of Tri-CBs (ng/g, dw)	Concentration of Tetra-CBs (ng/g, dw)	Concentration of Penta-CBs (ng/g, dw)	Concentration of Hexa-CBs (ng/g, dw)	Concentration of Total PCBs (ng/g, dw)
Baseline	2.0 ± 2.6 (0.23 – 8.4)	15 ± 25 (2.0 – 84)	41 ± 51 (5.7 – 178)	21 ± 25 (4.2 – 70)	89 ± 101 (29 – 351)
10-Month	0.52 ± 0.72 (0.02 – 2.1)	2.2 ± 2.0 (0.13 – 6.2)	7.1 ± 7.2 (0.48 – 23)	5.5 ± 5.8 (0.22 – 17)	18 ± 16 (0.99 – 50)
21-Month	0.75 ± 0.89 (ND – 3.0)	3.4 ± 4.9 (0.05 – 17)	13 ± 17 (0.47 – 58)	4.8 ± 6.0 (0.23 – 19)	26 ± 32 (0.93 – 106)
33-Month	1.5 ± 2.1 (ND – 4.8)	6.5 ± 12 (0.38 – 38)	16 ± 26 (1.5 – 88)	11 ± 17 (0.95 – 57)	39 ± 60 (3.1 – 203)

*Concentrations shown as average ± SD (minimum – maximum)

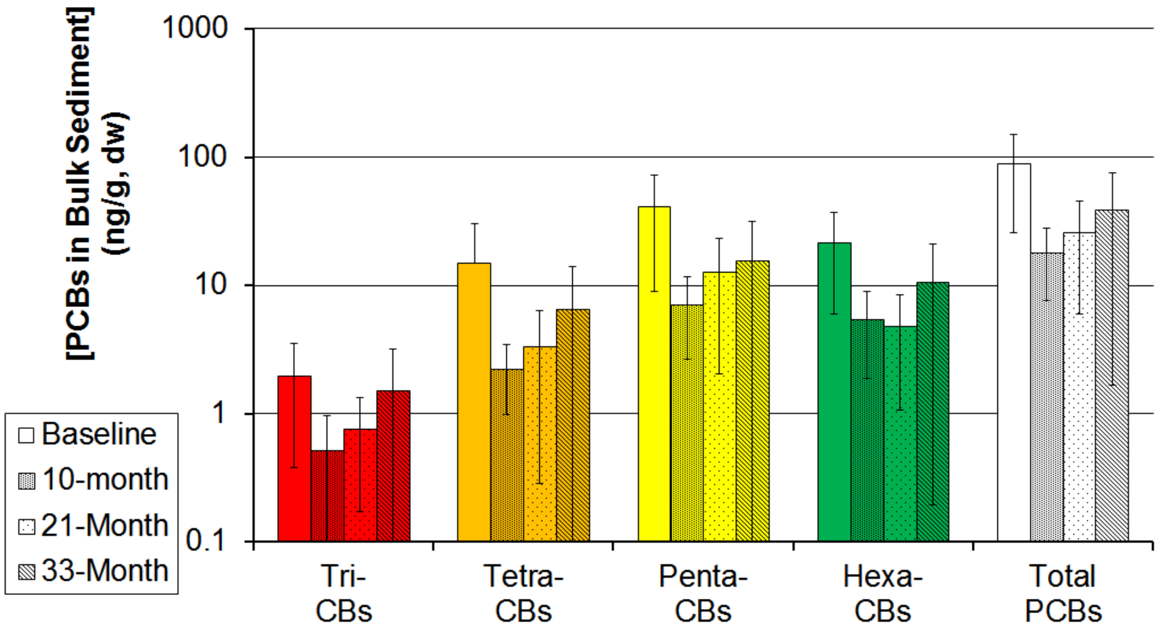


Figure 36. Concentrations of PCBs in Bulk Sediment on a Dry Weight (DW) Basis.

Results are shown as mean ± 95% CL.

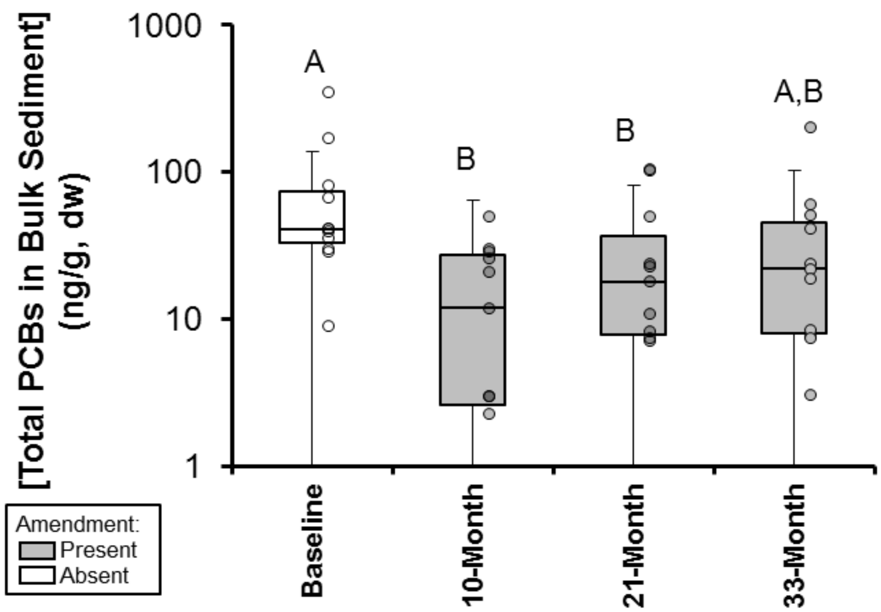


Figure 37. Concentrations of total PCB in Bulk Sediment (ng/g, dw). *Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

Concentrations of PCBs in Sediment, Debris Corrected

The concentrations of PCBs in sediment corrected for debris sized greater than 2 mm are summarized in Table 12. On average, debris-corrected concentrations of total PCBs in the sediment from the 10-, 21-, and 33-month events were 1.8-times greater than bulk samples (Table 11). The bulk samples contained large amounts of shell hash, cobble, and aggregate, increasing the sample mass relative to the PCB mass (resulting in a lower concentration). In general, concentrations of PCBs by homolog in the post-amendment events were lower than concentrations observed in the baseline after debris correction (Figure 38). No significant difference was found between the baseline and subsequent monitoring events for concentrations of total PCBs in sediment corrected for debris content (Figure 39), indicating the debris-corrected approach was a better approximation of total PCB concentrations in sediment.

Table 12. Concentrations of Total PCBs in Bulk Sediment (debris corrected).

Event	Concentration of Tri-CBs (ng/g, dw)	Concentration of Tetra-CBs (ng/g, dw)	Concentration of Penta-CBs (ng/g, dw)	Concentration of Hexa-CBs (ng/g, dw)	Concentration of Total PCBs (ng/g, dw)
Baseline	Not measured	Not Measured	Not Measured	Not Measured	Not measured
10-Month	0.80 ± 0.96 (0.07 – 3.0)	4.6 ± 5.5 (0.42 – 19)	16 ± 21 (1.6 – 68)	12 ± 16 (0.72 – 50)	38 ± 45 (3.2 – 150)
21-Month	1.1 ± 0.93 (ND – 3.3)	5.0 ± 5.4 (0.14 – 19)	19 ± 20 (1.3 – 64)	7.4 ± 7.6 (0.62 – 21)	40 ± 37 (2.5 – 118)
33-Month	2.3 ± 2.9 (ND – 6.1)	11 ± 20 (0.68 – 65)	27 ± 45 (2.6 – 154)	18 ± 29 (1.7 – 100)	66 ± 104 (5.6 – 354)

*Concentrations shown as average ± SD (minimum – maximum)

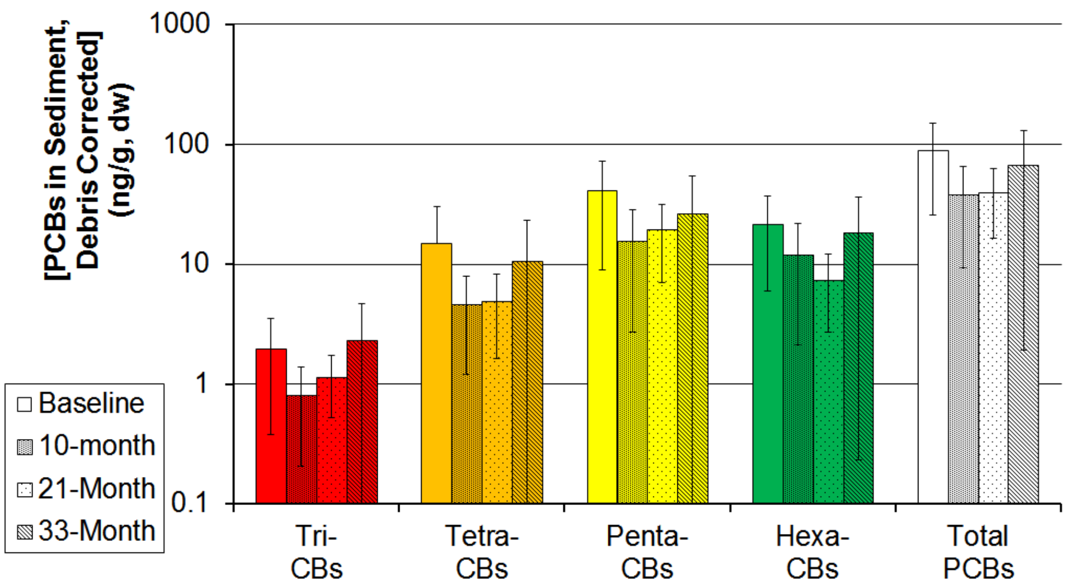


Figure 38. Concentrations of PCBs in sediment, debris corrected (ng/g, dw). *Baseline was not debris corrected. Results are shown as mean ± 95% CL.*

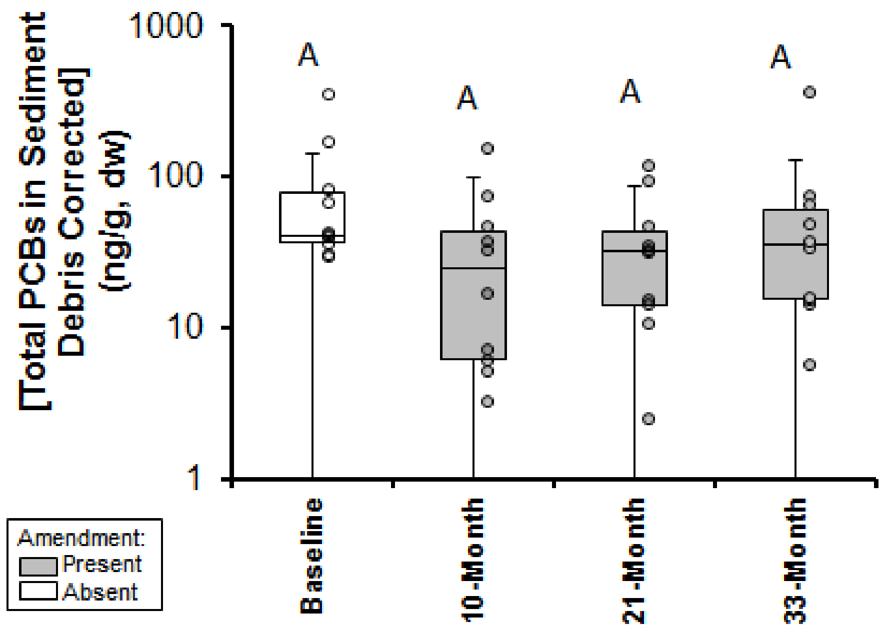


Figure 39. Concentrations of Total PCBs in Sediment, Debris Corrected (ng/g, dw). *Baseline was not debris corrected. Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

5.7.1.3.3 OC-Normalized Concentrations of PCBs in Sediment, Debris Corrected

OC-normalized concentrations of PCBs corrected for debris are summarized in Table 13. Generally, concentrations of PCBs by homolog in the post-amendment were lower than concentrations observed in the baseline after debris correction and OC normalization (Figure 40). No significant difference in concentrations of total PCBs was observed between the baseline and 10- and 33-month monitoring events (35% and 40% lower on average, respectively); however, concentrations in the 21-month event were significantly lower than the baseline (64% lower on average, Figure 41).

There were only four out of 44 samples in all monitoring events (9%) that exceeded the Minimum Clean Up Level (MCUL) for OU B Marine for total PCBs in sediment of 3,000 ng/g, OC (based on natural recovery modeling, USEPA 2000b). Additionally, most samples in all monitoring events (71%) did not exceed the cleanup goal for OU B Marine for total PCBs in sediment of 1,200 ng/g, OC (based on the 90th percentile of reference-area concentration). In the baseline, two samples exceeded the MCUL and 6 samples exceeded the cleanup goal for OU B Marine. In the 33-month sampling event, one sample exceeded the MCUL and 4 exceeded the cleanup goal for OU B Marine. Sediment quality goals for total PCBs for OU B Marine are 12,000 ng/g, OC which is the Washington State SQS, and generally falls within the range of other regional marine sediment cleanup actions (Washington State Cleanup Screening Level is 65,000 ng/g, OC, USEPA 2000b, WSDOE 2015). For surface sediments in Sinclair Inlet prior to cleanup, the minimum and maximum concentrations reported were 1,570 to 61,700 ng/g, OC (USEPA 2000b).

Table 13. OC-normalized Concentrations of PCBs in Sediment (Debris Corrected).

Event	Concentration of Tri-CBs (ng/g, OC)	Concentration of Tetra-CBs (ng/g, OC)	Concentration of Penta-CBs (ng/g, OC)	Concentration of Hexa-CBs (ng/g, OC)	Concentration of Total PCBs (ng/g, OC)
Baseline*	89 ± 120 (6.1 – 375)	704 ± 1,172 (55 – 3,745)	1,776 ± 2,491 (204 – 7,956)	802 ± 915 (130 – 2,982)	3,783 ± 4,805 (612 – 15,713)
10-Month	36 ± 45 (1.8 – 118)	296 ± 593 (12 – 1,954)	1,042 ± 2,166 (35 – 7,105)	807 ± 1,615 (21 – 5,243)	2,451 ± 4,788 (93 – 15,748)
21-Month	43 ± 90 (ND – 282)	203 ± 486 (1.6 – 1,583)	722 ± 1,665 (14 – 5,438)	249 ± 552 (6.8 – 1,807)	1,377 ± 3,042 (27 – 9,987)
33-Month	87 ± 122 (ND – 252)	401 ± 850 (8.9 – 2,726)	945 ± 1,950 (35 – 6,424)	616 ± 1,256 (23 – 4,156)	2,261 ± 4,458 (73 – 14,752)

*Not debris corrected

*Concentrations shown as average ± SD (minimum – maximum)

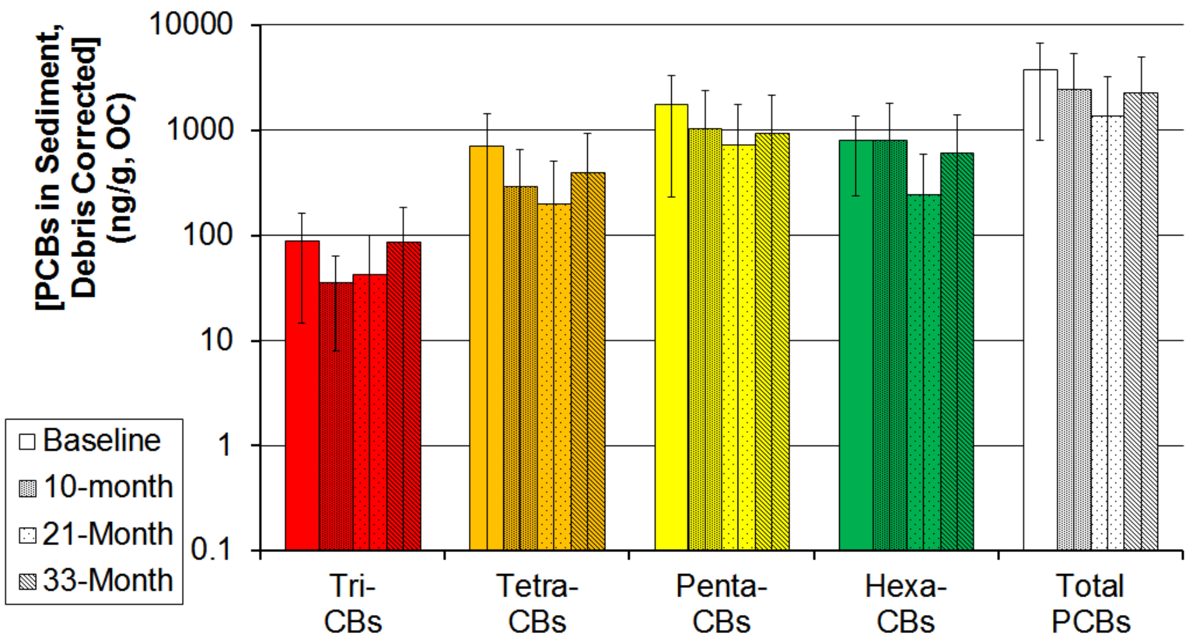


Figure 40. OC-normalized Concentrations of PCBs in Sediment, Debris Corrected (ng/g, OC).

Baseline was not debris corrected. Results are shown as mean ± 95% CL.

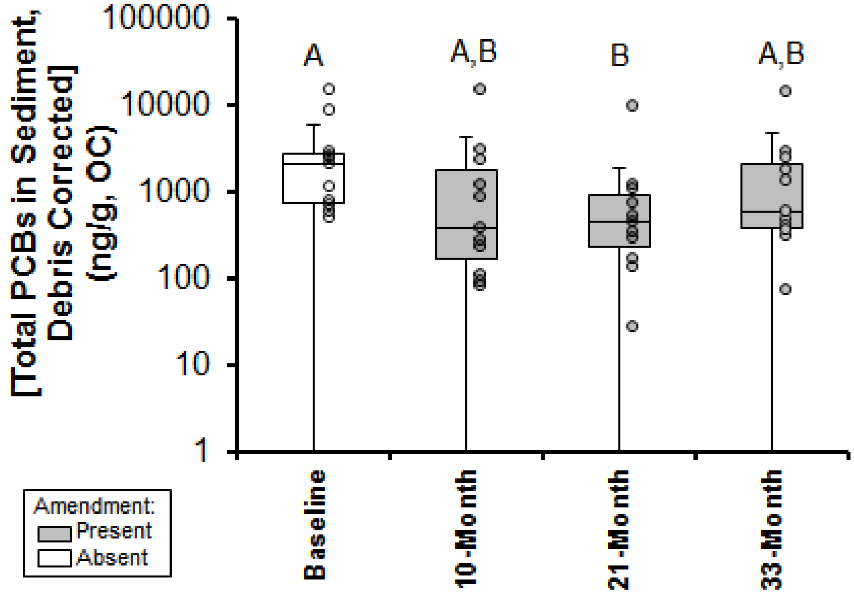


Figure 41. OC-normalized Concentrations of Total PCBs in Sediment, Debris Corrected (ng/g, OC).

Events not connected by the same letter are significantly different ($p \leq 0.05$). Baseline was not debris corrected. Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

5.7.1.3.4 Concentrations of Total Mercury in Bulk Sediment

The concentrations of total mercury in bulk sediment (unsieved) in the 10- and 21-month events were significantly lower than the baseline (81% and 80% on average, respectively, Figure 42). The reason for the initial decrease of total Hg concentrations observed for the 10- and 21-month events is not fully understood. The reduction could have been caused by inhomogeneity of sediments at the site, dilution from the amendment, and differences in the sample processing and analytical methods used during the study. No significant difference was observed from the baseline to the 33-month event (average 51% lower). The apparent reduction in total Hg sediment concentrations may be due in part to the fact that many samples contained large amounts of shell hash, cobble, and aggregate (for post-placement samples). The concentrations were corrected for percent debris below.

The concentrations of total Hg were also statistically higher during the baseline compared to the 10- and 21-month events, and the total Hg concentrations measured during the baseline and 33-month events were statistically similar. The reason for the initial decrease of total Hg concentrations observed for the 10- and 21-month events is not fully understood. The reduction could have been caused by inhomogeneity of sediments at the site, dilution from the amendment, and differences in the sample processing and analytical methods used during the study. The total Hg concentrations measured in samples from Pier 7 during this study were within the range of total Hg concentrations reported for sediment monitoring within OU B Marine during 2013 (average 508 ng/g ww; range 203 – 910 ng/g ww) and Sinclair Inlet (average 330 ng/g ww; range 13 – 770 ng/g ww) (US Navy 2015) and higher than Puget Sound reference areas (average 70 ng/g ww) reported by (Moran et al. 2013).

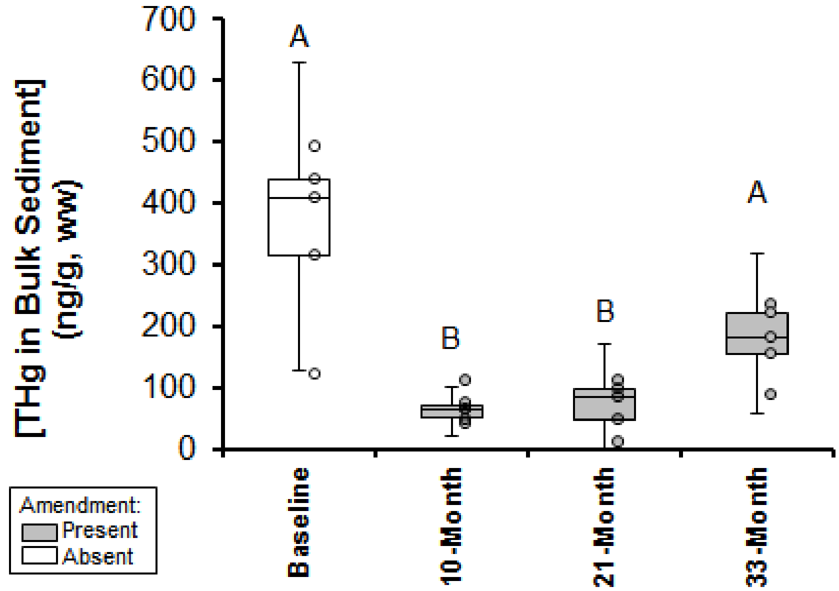


Figure 42. Concentrations of Total Mercury in Bulk Sediment (ng/g, ww). *Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

5.7.1.3.5 Concentrations of Methylmercury in Bulk Sediment

The concentrations of methylmercury in bulk sediment, conversely to the total mercury, increased from the baseline to the 10-, 21-, and 33-month events by 15%, 398%, and 290%, respectively (Figure 43). The differences in sediment MeHg concentrations observed may be due to seasonal methylation processes that varied between the sampling events. The MeHg concentrations measured in samples from Pier 7 during this study were lower than the average sediment MeHg concentrations reported for sediment monitoring within OU B Marine of 1.52 ng/g ww (range 0.2 – 3.1 ng/g ww) and Sinclair Inlet of 1.96 ng/g ww (range 0.4 – 4.3 ng/g ww) (US Navy 2015b) and Puget Sound reference areas (average 1.54 ng/g ww) reported by (Moran et al. 2013). Concentrations in the 21- and 33-month events were significantly higher than the baseline. Although methylmercury was shown to increase in sediments significantly in the 21- and 33-month events, no significant difference was found from the baseline to the 21- and 33-month events for concentrations in the clam tissue in the *in situ* SEA Ring bioaccumulation testing. Also, significant decreases were observed in the 21- and 33-month events for concentrations in the polychaete tissue.

The concentrations of MeHg measured during this study were relatively low; the highest concentrations were measured during the 21- and 33-month events. Differences in sediment MeHg concentrations observed may be controlled by seasonal methylation processes that varied between the sampling events. The MeHg concentrations measured in samples from Pier 7 during this study were lower than the average sediment MeHg concentrations reported for sediment monitoring within OU B Marine of 1.52 ng/g ww (range 0.2 – 3.1 ng/g ww) and Sinclair Inlet of 1.96 ng/g ww (range 0.4 – 4.3 ng/g ww) (US Navy 2015b) and Puget Sound reference areas (average 1.54 ng/g ww) reported by (Moran et al. 2013).

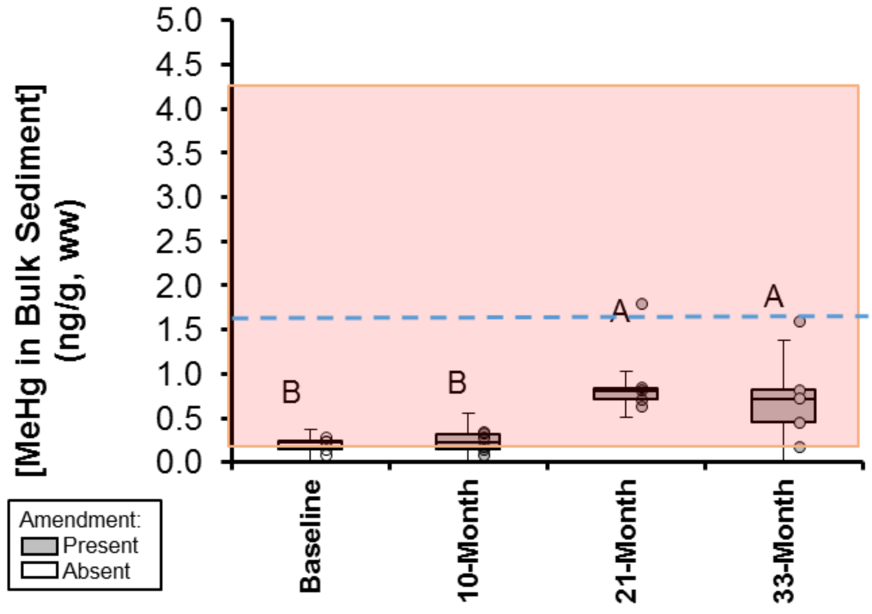


Figure 43. Concentrations of MeHg in bulk sediment (ng/g, ww). *Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols. The range of MeHg observed for OU B Marine and Sinclair Inlet during long-term monitoring (shaded area) and average MeHg concentrations reported for reference areas of Puget Sound (dashed line).*

5.7.1.3.6 Concentrations of Total Mercury in Sediment, Debris Corrected

Concentrations of total mercury in sediment corrected for debris sized greater than 2 mm are shown in Figure 44. Similar to uncorrected concentrations, significant decreases in total Hg were found from the baseline to the 10- and 21-month events. It should be noted, the sediment samples submitted for total mercury and methylmercury analysis were not sieved in the 10- and 21-month events. The debris correction factors used for the 10-month and 21-month were assumed to be the same as those observed in the samples submitted for PCB analysis for each event respectively. However, the site was very heterogeneous in regards to presence of debris such as shell hash and cobble. The sediment samples submitted for analysis in the 33-month event were sieved and sample specific debris correction factors were provided.

The action level for OU B Marine sediments for mercury is 3,000 ng/g (USEPA 2000b). The marine sediment management standards for the protection of the benthic community for mercury range from 410 to 590 ng/g, dw for the SQS and MCUL, respectively (WSDOE 2015). For mercury, the sediment natural background value for Puget Sound is reported as 200 ng/g, dw (WSDOE 2015). Note, the concentrations in mercury presented for the Pier 7 demonstration were on a ww basis. Solids content was provided for the baseline samples only and the baseline had comparable concentrations to the 33-month event (33-month was 2% higher than the baseline on average). Concentrations of total mercury in sediment corrected for debris averaged 553 ng/g, dw ± SD 179 ng/g, dw (range of 212 –713 ng/g, dw).

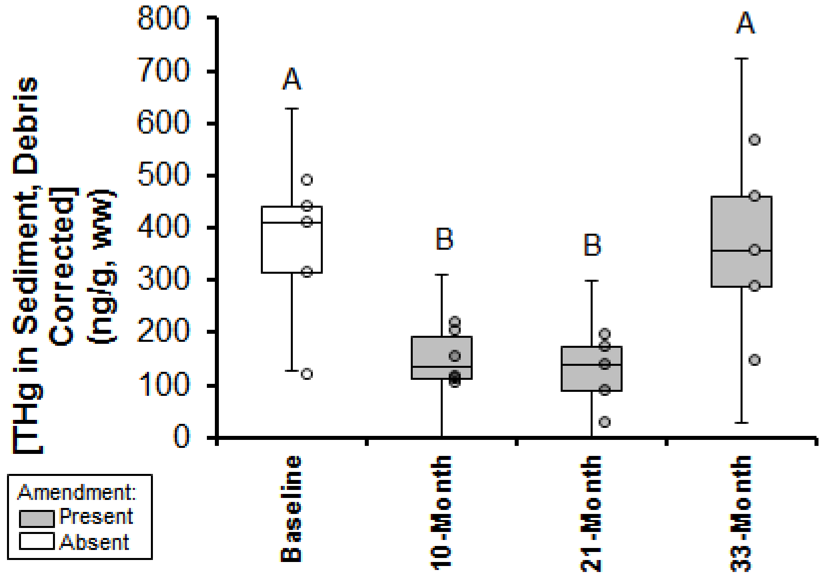


Figure 44. Concentrations of Total Mercury in Sediment, Debris Corrected (ng/g, ww).
Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

5.7.1.3.7 Concentrations of Methylmercury in Sediment, Debris Corrected

Concentrations of methylmercury in sediment corrected for debris sized greater than 2 mm are shown in Figure 45. Similar to uncorrected concentrations, significant increases in methylmercury were found from the baseline to the 21- and 33-month events (822% and 613% on average, respectively). The debris corrected concentrations of methylmercury in sediments for the 10-month event were also significantly higher (149% on average).

Although methylmercury was shown to increase in sediments significantly in the 10-, 21- and 33-month events compared to the baseline, no significant difference was found from the baseline to the 10-, 21-, and 33-month events for concentrations in the clam tissue. No significant difference was observed from the baseline to the 10-month event for the concentrations in the polychaete tissue in the *in situ* SEA Ring bioaccumulation testing; also, significant decreases were observed in the 21- and 33-month events. As with the debris corrected concentrations of total mercury in sediment, a debris correction factor that was not specific to the samples submitted for methylmercury analysis was applied; however, sample specific debris correction factors were provided for the 33-month event.

Human health risk based sediment concentrations for the consumption of fish and shellfish in Washington are 16 – 71 ng/g, dw (WSDOE 2015). Note, the concentrations of methylmercury presented for the Pier 7 demonstration were on a ww basis. Solids contents for the 21-month event (event with highest methylmercury concentrations in sediment) were assumed to be equal to the average solids content of the baseline sediment samples submitted for total mercury analysis. Concentrations of methylmercury in sediment corrected for debris averaged 2.7 ng/g, dw ± SD 0.90 ng/g, dw (range 1.7 – 3.9 ng/g, dw).

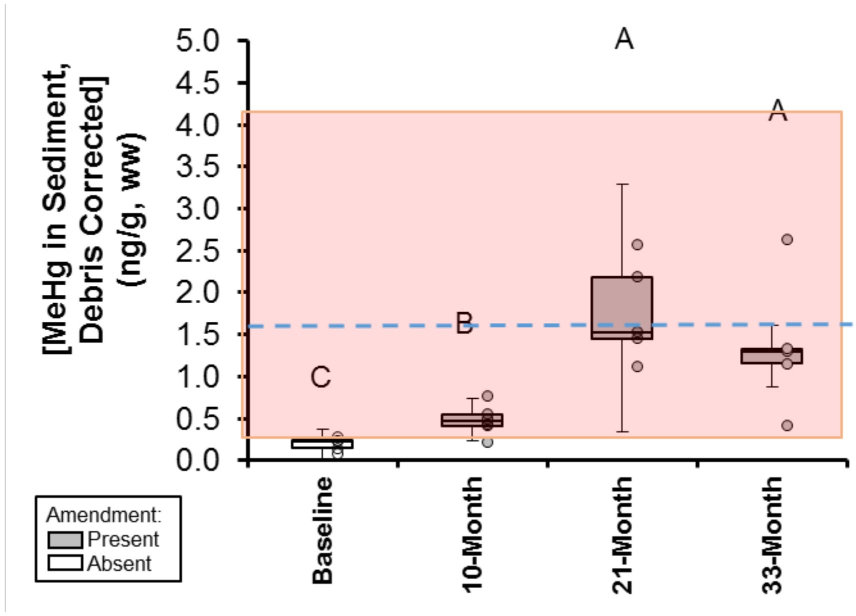


Figure 45. Concentrations of MeHg in Sediment, Debris Corrected (ng/g, ww).

Baseline was not debris corrected. Events not connected by the same letter are significantly different ($p \leq 0.05$). Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols. The range of MeHg observed for OU B Marine and Sinclair Inlet during long-term monitoring (shaded area) and average MeHg concentrations reported for reference areas of Puget Sound (dashed line).

5.7.1.3.8 Grain Size

The detailed results of the grain size analysis in the baseline characterization as well as the 10-, 21-, and 33-month events are given in Appendix G. A summary of the results is provided in Table 14. Sand was dominant at the majority of the multi-metric stations in the baseline characterization and 10-, 21-, and 33-month monitoring events. Stations which were largely silt were only observed in the baseline characterization. On average, the presence of gravel at the site increased by 81%, 91%, and 78% from the baseline to the 10-, 21-, and 33-month events, respectively. This increase in gravel may be due to the presence of the aggregate from the AquaGate and/or the presence of cobble/armoring deposited following fender piling replacement in 2010-2011 as observed by the SPI survey. In Figure 46, sediment profile images from nearby locations taken in 2012 and 2013 show the radical difference in sediment type for stations located along the edge of the pier where the sand blanket and surface armoring was placed following fender pile replacement; compare the differences in images from Station 1-3 (top) and 4-3 (bottom). The width of each profile image is 14.6 cm (Germano and Associates 2013b). The area associated with the sand blanket and armoring was a narrow strip extending out about 15 feet on either side of the row of pilings. Sampling in this area was avoided in subsequent surveys.

Overall, the presence of sand remained relatively constant over the 3 monitoring events compared to the baseline on average. The presence of fines (silt and clay) decreased from the baseline by 40%, 39%, and 55% compared to the 10-, 21-, and 33-month events, respectively. In each monitoring event, the presence of shell hash was evident, especially at stations under Pier

7. The results of the SPI survey are in general agreement with the grain size analysis and indicate an overall consistent presence of sand and silt at the stations, on average for the site. The presence of gravel increased in the 10-, 21-, and 33-month events and may indicate the presence of aggregate from AquaGate amendment.

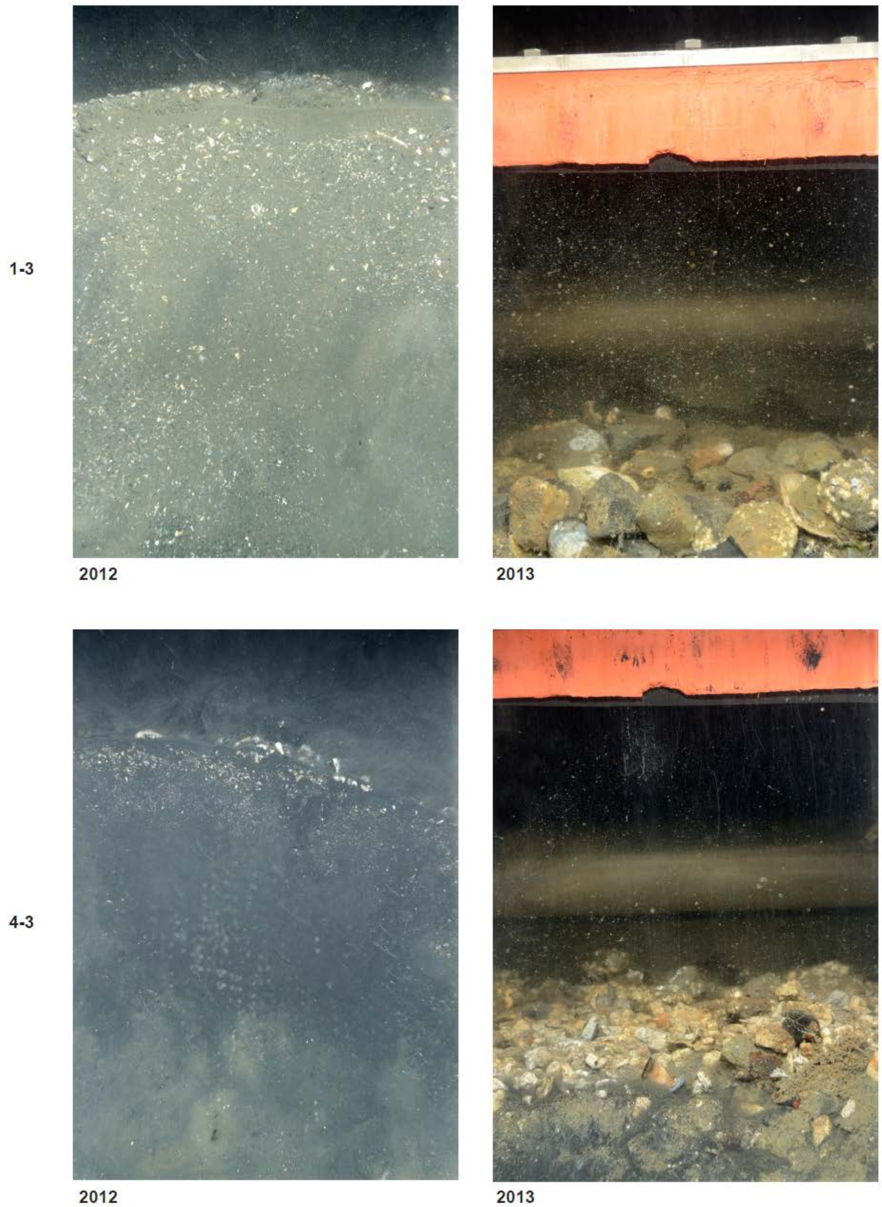


Figure 46. Presence of Cobble/Armoring in 10-month (2013) Post-placement SPI Survey (Germano and Associates 2013b).

Table 14. Percent of stations with observed sediment textures.

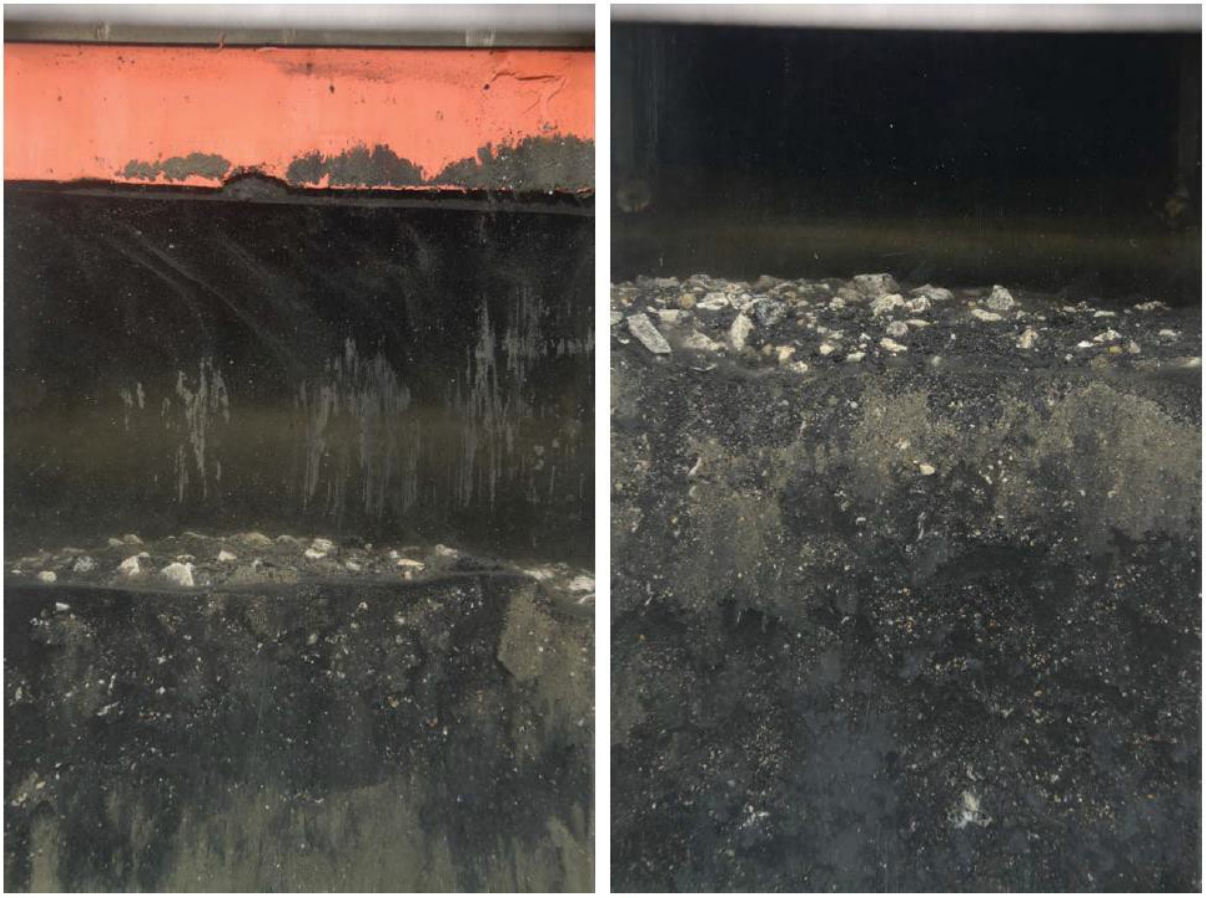
Event	Gravel	Gravel with Sand	Sand	Sand with Gravel	Sand with Silt	Sand with Gravel and Silt	Silt
Baseline	12.5%	0%	50%	0%	12.5%	0%	25%
10-Month	10%	0%	50%	30%	0%	10%	0%
21-Month	20%	10%	40%	20%	10%	0%	0%
33-Month	20%	10%	60%	0%	0%	10%	0%

5.7.2 Performance Objectives (5.) and (6.): Demonstrate Uniform Deep Water Placement to Target Footprint and Physical Stability Over Time

5.7.2.1 Sediment Profile Imagery

Following placement of the amendment, a SPI survey was performed to evaluate the placement to the target footprint and stability over time. Table 15 summarizes the thickness of the amendment within the target amendment area. The detailed SPI survey reports are provided in Appendix C. Although the SPI survey was conducted only two weeks (0.5 months) after the material had been placed, the covering of AC particles had already released from the underlying carrier granules. In Figure 47, the sediment profile images from SPI station 3-4 (left) and 5-4 (right) show how the AC covering on the particles for the AquaGate was released from the carrier granules, leaving a surface armoring of white pebbles, while the AC particles were being re-worked into the underlying sediment (the width of each image is 14.5 cm, Germano and Associates 2013b).

By 10 months, it appeared that the AC was worked into the underlying sediment by the burrowing activities of resident infauna and other mixing processes (Germano and Associates 2014a). Visual evidence of the reactive amendment being re-worked into the bottom sediments by bioturbation was clearly evident. In Figure 48, the sediment profile image from SPI station 4-4 shows active particle transport of the AC particles as well as development of a surface oxidized layer (the width of profile image is 14.6 cm). By the 21- and 33-month sampling events, the AC was observed deeper in the sediment profile with a small layer of deposited sediment at the surface (Germano and Associates 2014b, Germano and Associates 2015).



3-4 5-4

Figure 47. Sediment Profile Images from SPI Station 3-4 (left) and 5-4 (right) at 0.5-month Post Placement.

Figure 48. Sediment Profile Image from SPI station 4-4 at 10-month Post Placement.

Table 15. Thickness of the Amendment within the Target Area.

Event	Number of Stations with Deposits of AquaGate	Number of Stations Sampled*	Percent of Stations with Deposits of AquaGate	Amendment Thickness** (cm)
0.5-Month	12	15	80%	11 ± 5.6 (0.1 – 17)
10-Month	18	22	82%	6.9 ± 5.4 (0.1 – 18)
21-Month	14	21	67%	11 ± 5.2 (2.3 – 19)
33-Month	16	22	73%	8.8 ± 5.3 (0.1 – 17)

* Indeterminate stations were not included
** Shown as Average ± SD (Minimum – Maximum)

An initial survey was performed 0.5-month following amendment placement to confirm placement in the target area. Measureable deposits of AC amendment could be seen at 12 stations, while 7 stations showed only traces of the AquaGate particles in the upper oxidized layer of sediment. At those stations where the cap material could be detected, the thickness ranged from trace layers to 17.1 cm, with an overall site average of 4.0 cm (Figure 49, Germano and Associates 2013b). Approximately 80% of the target area had measureable deposits of AquaGate (average depth of 11 cm), with additional areas to the northwest and east of the target area boundary also showing trace (0.1 cm) and measurable deposits (4.75-7.17 cm).

At the 10-month survey, measureable deposits of AquaGate were present at 16 stations, while 5 stations showed only traces of the AquaGate particles in the upper oxidized layer of sediment. At those stations where the amendment material could be detected, the thickness ranged from trace amounts to 18.3 cm thick, with an average thickness of 8.0 cm at the 16 stations where a distinct layer could be measured (Figure 50, Germano and Associates 2014a). Approximately 70-80% of the target area had measureable or trace deposits of AquaGate (average depth of 6.9 cm), with a small additional area to the southeast with trace deposits.

In the 21-month post- placement survey, measureable deposits of AquaGate were present at 14 stations. At those stations where the amendment material could be detected, the thickness ranged from trace layers to 18.6 cm, with an average thickness of 10.5 cm at those 14 stations where a distinct layer could be measured (Figure 51, Germano and Associates 2014b). The AquaGate area was more contiguous than was observed in the 10-month SPI survey and shifted slightly east. Approximately 60-70% of the target area had measureable or trace deposits of AquaGate (average depth of 10 cm), with minimal deposits observed outside the target area.

In the 33-month post-placement survey, measureable deposits of AquaGate were present at 17 stations. At those stations where the amendment material could be detected, the thickness ranged from trace layers to 17.2 cm, with an average thickness of 9.7 cm at those 15 stations where not just a trace was detected but a distinct layer could be measured (Figure 52, Germano and Associates 2015).

The area of measurable deposit of AquaGate has shifted slightly west. AquaGate was consistently measured in the target footprint area, though size and shape of the coverage varied between SPI surveys. The depth of measureable amendment increased to 9.7 cm average in the 33-month survey. Some of the variation in thickness was associated with changes in the sampling locations between surveys. While each grid cell was sampled, it was not possible to sample at the exact same locations for each survey and each sampling point could vary as much as 3-5 m from the previous sampling location. Natural depositional processes and bioturbation of the sediments by the resident infauna are expected to continue to mask the signature of this depositional layer over time; however, the presence of amendment to measurable depths within the target area has remained stable since placement (Germano and Associates 2015). Approximately 60-70% of the target area retained measureable or trace deposits of AquaGate (average depth of 8.8 cm), with measureable deposits observed outside the target area to the south (5.23 cm).

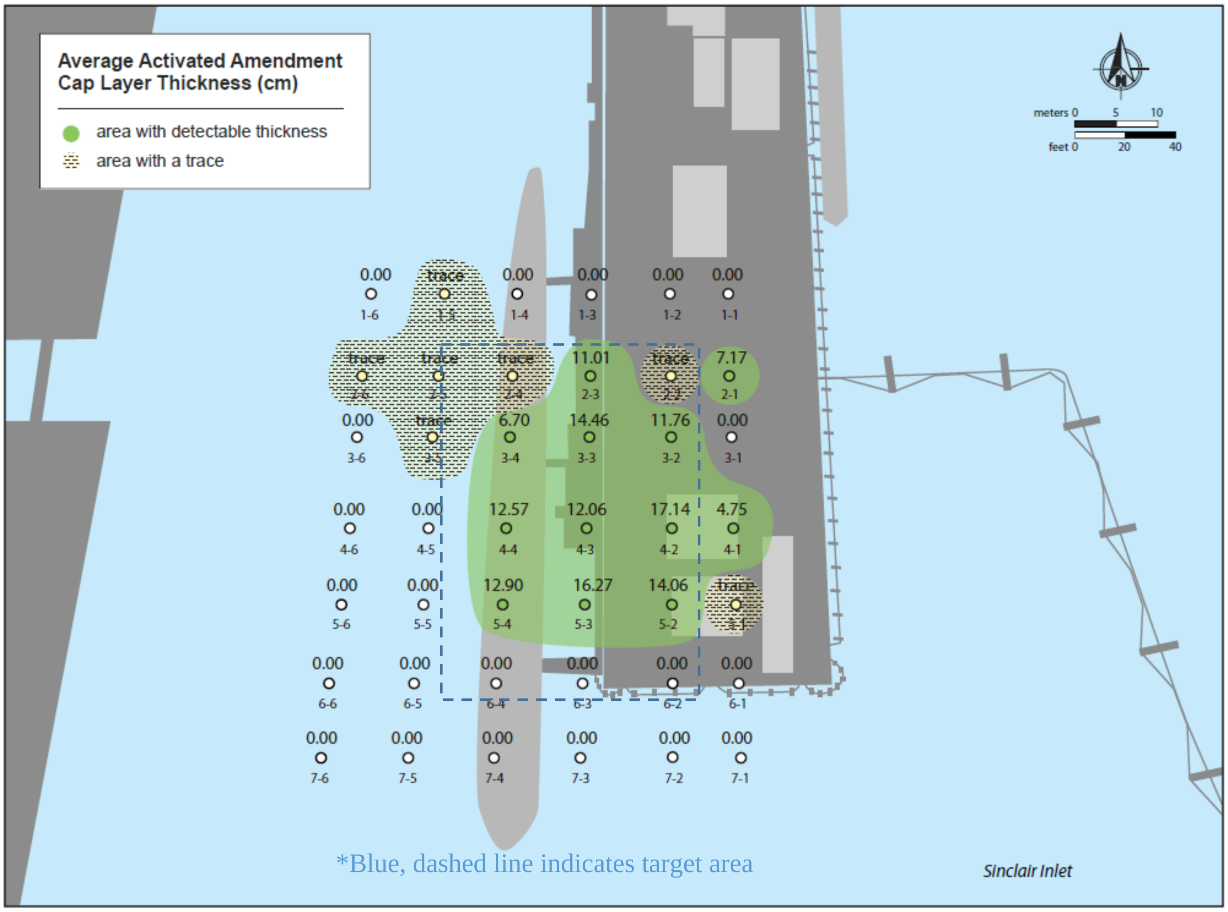


Figure 49. Activated Carbon Amendment Thickness during the 0.5-month Post-placement SPI Survey (Germano and Associates 2013b).

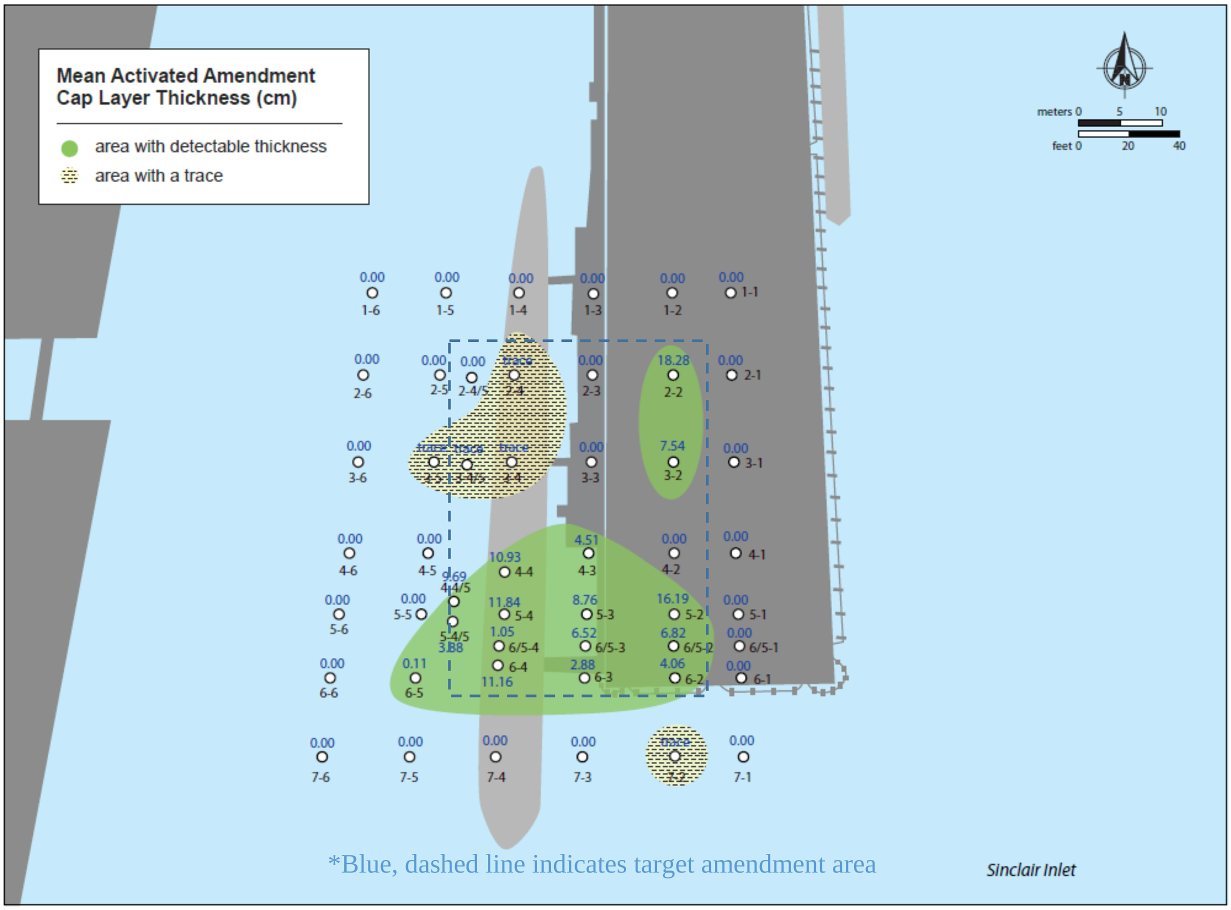


Figure 50. Activated Carbon Amendment Thickness during the 10-month Post-placement SPI Survey (Germano and Associates 2014a).

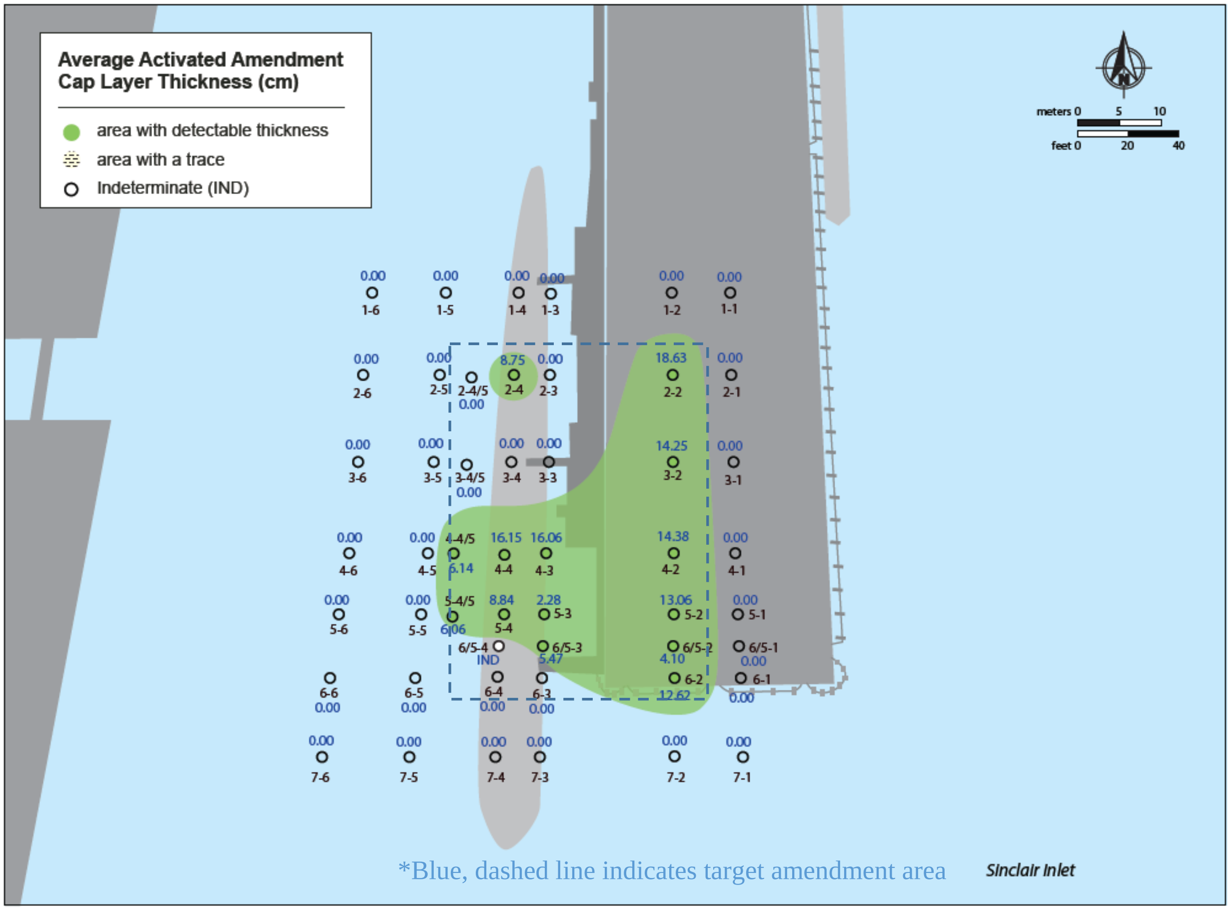


Figure 51. Activated Carbon Amendment Thickness during the 21-month Post-placement SPI Survey (Germano and Associates 2014b).

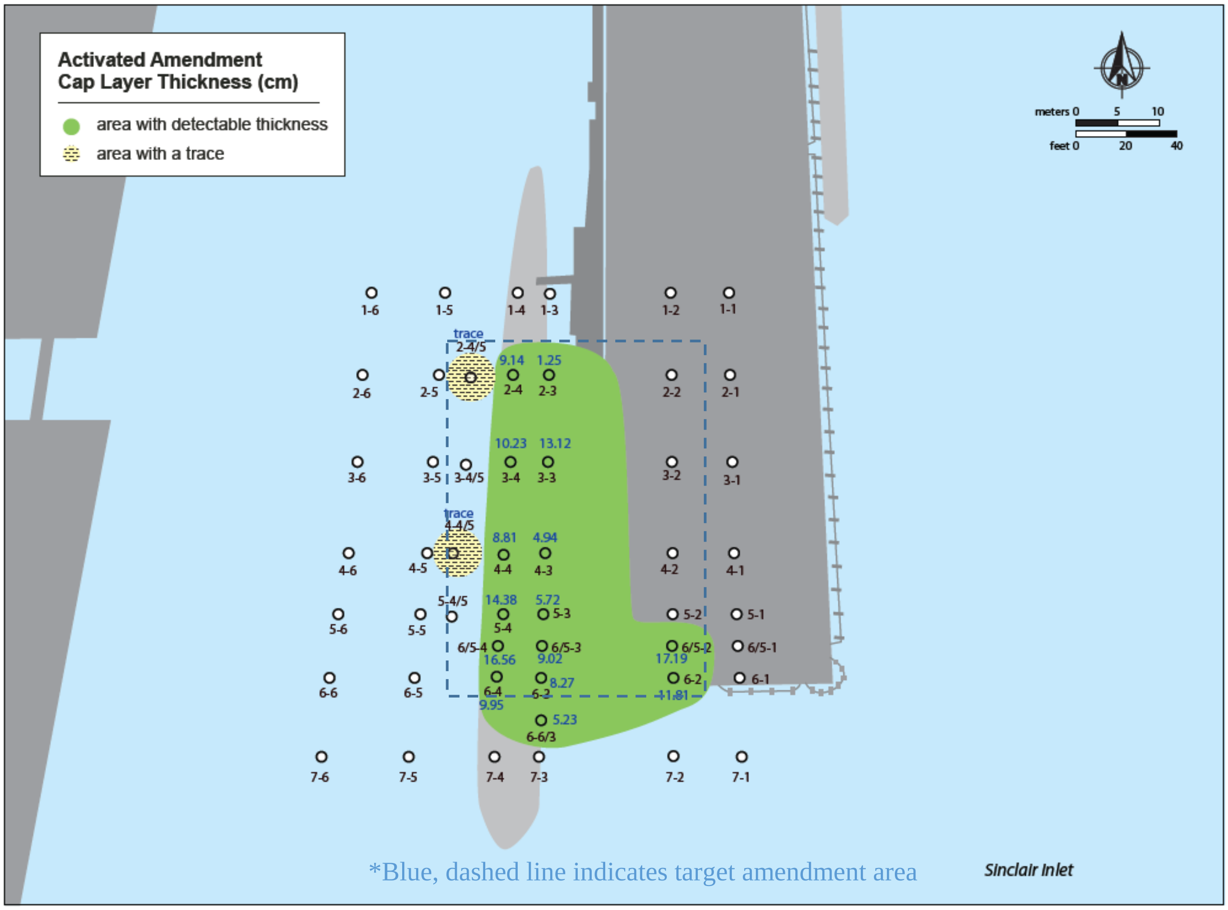


Figure 52. Activated Carbon Amendment Thickness during the 33-month Post-placement SPI Survey (Germano and Associates 2015).

5.7.2.2 TOC and BC Contents in Surface Sediment

5.7.2.2.1 Total Organic Carbon Content in Sediment

The detailed results of the TOC analysis are provided in Appendix G and summarized in Table 16. In the 0-5 cm interval below the sediment-water interface, there was a significant increase from the baseline to the 0.5-month and 10-month events (increases of 103% and 133% on average, respectively). No significant difference in TOC contents from baseline to the 3-, 21-, and 33-month events were observed (average increases of 22%, 76%, and 14%, respectively (Figure 53).

In the 5-10 cm interval below the sediment-water interface, no significant difference in TOC was observed from the baseline to all subsequent monitoring events, with the exception of the 10-month event which had a 137% average increase. The 0.5-month and 10-month had average decreases of 10% and 64%, respectively. The 21- and 33-month events had increases of 35% and 34%.

In the 10-15 cm interval below the sediment-water interface, no significant difference was observed from the baseline to all subsequent events (on average increases ranging from 11%-97%, with the exception of the 0.5-month event which had a 21% decrease).

The changes to the analytical method used for TOC occurred in the 3-month event. All events utilized Lloyd Kahn method except the 3-month event which used SW-846 9060. This may have influenced differences in content from the baseline to the 3-month.

Table 16. Total Organic Carbon Content in Vertical Intervals of the Surface Sediment.

Event	0-5 cm Below Sediment-Water Interface (%)	5-10 cm Below Sediment-Water Interface (%)	10-15 cm Below Sediment-Water Interface (%)
Baseline	4.0 ± 2.4 (1.2 – 8.1)	3.0 ± 1.8 (0.9 - 6.1)	2.4 ± 1.5 (0.8 - 4.9)
0.5-Month	8.2 ± 3.2 (1.3 - 12)	2.7 ± 1.4 (1.0 - 5.7)	1.9 ± 1.5 (0.4 - 4.2)
3-Month	4.9 ± 4.4 (0.5 - 13)	1.1 ± 0.7 (0.2 - 1.9)	2.7 ± 4.7 (0.1 - 9.8)
10-Month	9.4 ± 3.5 (1.8 - 13)	7.2 ± 3.9 (0.6 - 12)	4.8 ± 2.8 (1.2 - 9.0)
21-Month	7.1 ± 6.3 (3.0 - 22)	4.1 ± 3.0 (0.7 - 11)	4.0 ± 3.1 (0.3 - 9.9)
33-Month	4.6 ± 2.6 (1.2 - 8.2)	4.0 ± 2.6 (1.3 - 9.7)	3.8 ± 3.3 (0.2 - 9.5)

*Values are the average ± SD (minimum – maximum)

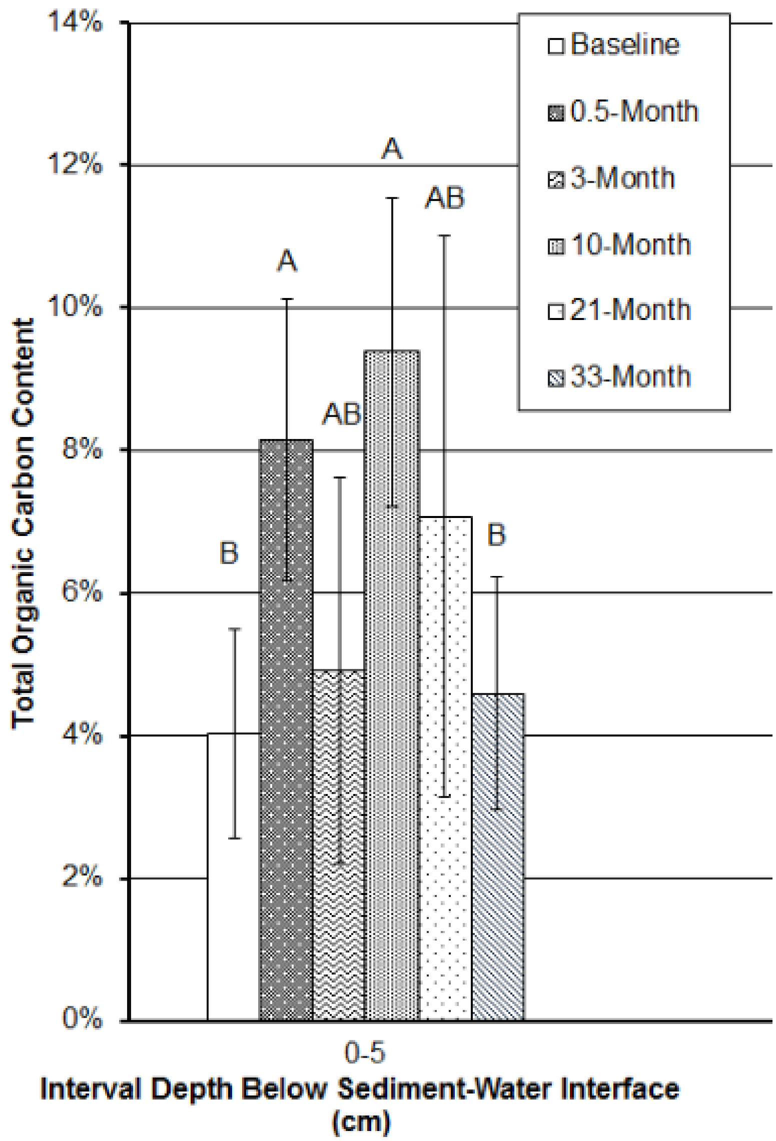


Figure 53. Content of TOC in Sediment at Three Intervals Below the Sediment-water Interface Including the 0-5 cm interval below the sediment-water interface (above), and the 5-10 cm and 10-15 cm intervals (following pages). Events not connected by the same letter are significantly different ($p \leq 0.05$) for each interval. Results are shown as mean ± 95% CL.

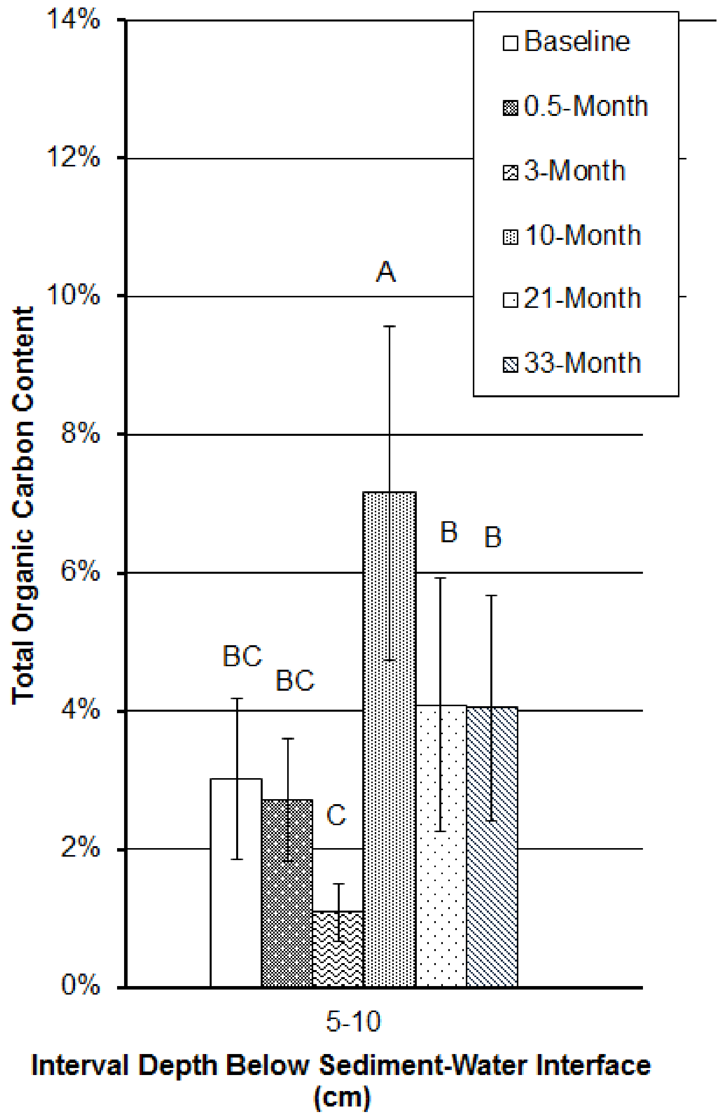


Figure 53 (cont.). Content of TOC in Sediment at 5-10 cm Interval Below the Sediment-water Interface.

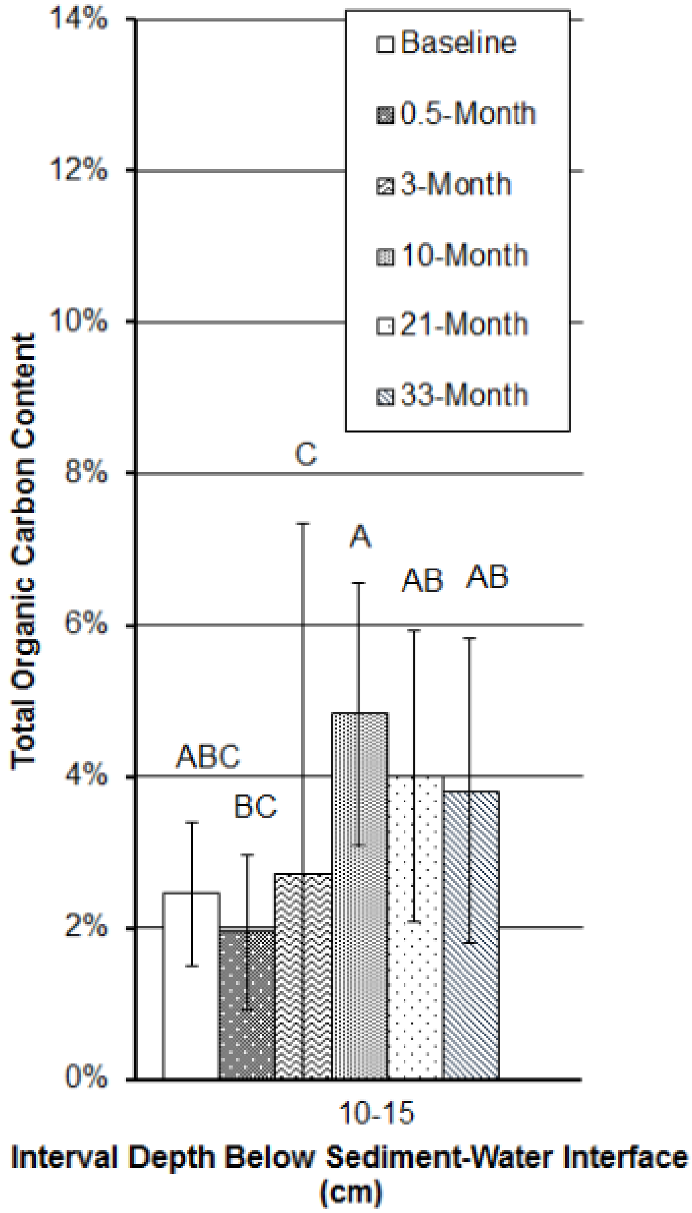


Figure 53 (cont.). Content of TOC in Sediment at 10-15 cm Interval below the Sediment-Water Interface.

5.7.2.2.2 Black Carbon Content in Sediment

The detailed results of the BC analysis in surface sediments are provided in Appendix G and summarized in Table 17. In the 0-5 cm depth interval below the sediment-water interface, no significant difference in BC content was observed from baseline to the subsequent monitoring events (Figure 54). In all subsequent events, there was an average increase, ranging from 10%-51%, with the exception of an average 61% decrease in the 33-month event.

In the 5-10 cm and 10-15 cm intervals, there was no significant difference from baseline to the subsequent monitoring events with the exception of significant increases in the 10-month event (average increases of 185% and 227%, respectively). In the 5-10 cm interval, there were decreases in the 0.5-, 3-, and 33-month events (average of 50%, 26%, and 51%, respectively) and an increase in the 21-month event (average 34%). In the 10-15 cm interval, there were decreases in the 0.5- and 33-month events (average of 22% and 37%, respectively) and an increase in the 3- and 21-month event (average 107% and 75%).

TOC and BC contents were highly variable among stations, there was a lot of heterogeneity within the stations, and sample processing was complicated by widely varying amounts of shell hash, cobble, and aggregate that could have biased the results obtained.

Table 17. Black Carbon Content in Vertical Intervals of the Surface Sediment.

Event	0-5 cm Below Sediment-Water Interface (%)	5-10 cm Below Sediment-Water Interface (%)	10-15 cm Below Sediment-Water Interface (%)
Baseline	2.5 ± 2.6 (0.1 - 7.6)	1.5 ± 1.7 (0.1 - 4.6)	1.1 ± 1.2 (0.2 - 2.9)
0.5-Month	3.3 ± 2.1 (0.1 - 6.9)	0.7 ± 0.5 (0.2 - 1.5)	0.8 ± 0.7 (0.3 - 1.8)
3-Month	3.0 ± 1.8 (0.4 - 6.4)	1.1 ± 1.1 (0.2 - 3.2)	2.2 ± 2.9 (0.1 - 4.3)
10-Month	3.7 ± 2.3 (0.4 - 7.6)	4.2 ± 2.9 (1.0 - 9.7)	3.5 ± 2.7 (0.3 - 9.6)
21-Month	2.7 ± 1.4 (0.3 - 5.3)	2.0 ± 1.4 (0.2 - 4.4)	1.9 ± 1.5 (0.1 - 4.2)
33-Month	1.0 ± 0.6 (0.3 - 2.0)	7.0 ± 0.6 (0.1 - 1.8)	0.7 ± 0.6 (0.1 - 2.1)

*Values are the average ± SD (minimum – maximum)

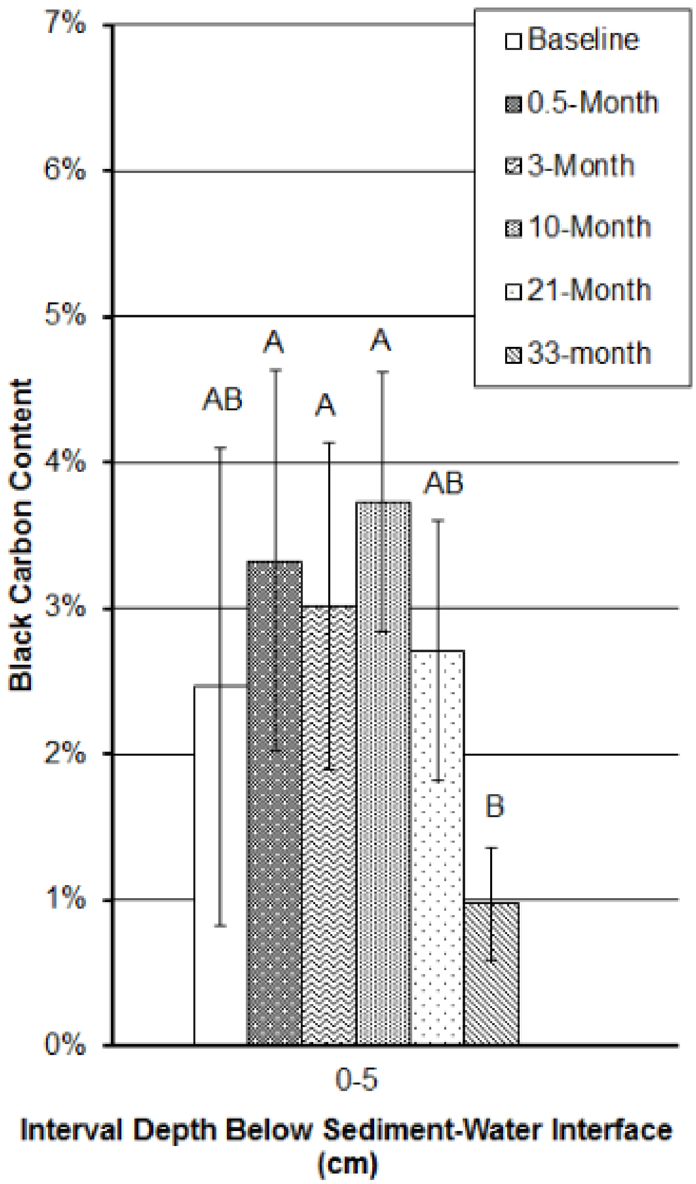


Figure 54. Content of BC in Sediment at Three Intervals below the Sediment-water Interface including the 0-5 cm interval below the sediment-water interface (above), and the 5-10 cm and 10-15 cm intervals (following pages). Events not connected by the same letter are significantly different ($p \leq 0.05$) for each interval. Results are shown as mean ± 95% CL.

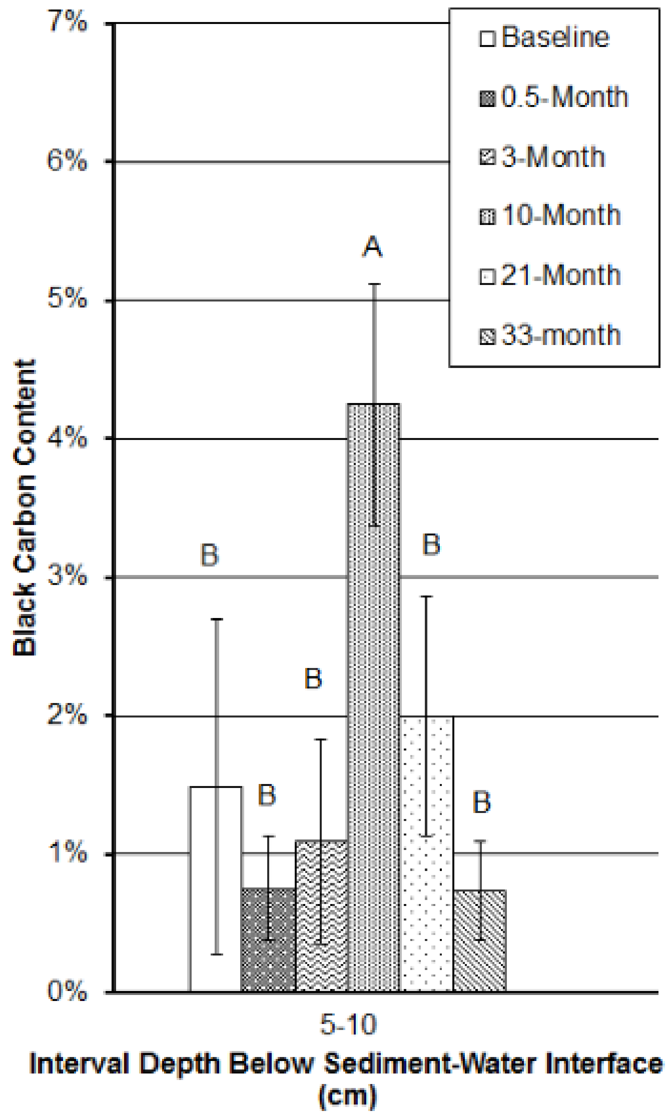


Figure 54 (cont.).Content of BC in Sediment at 5-10 cm Interval below the Sediment-water Interface.

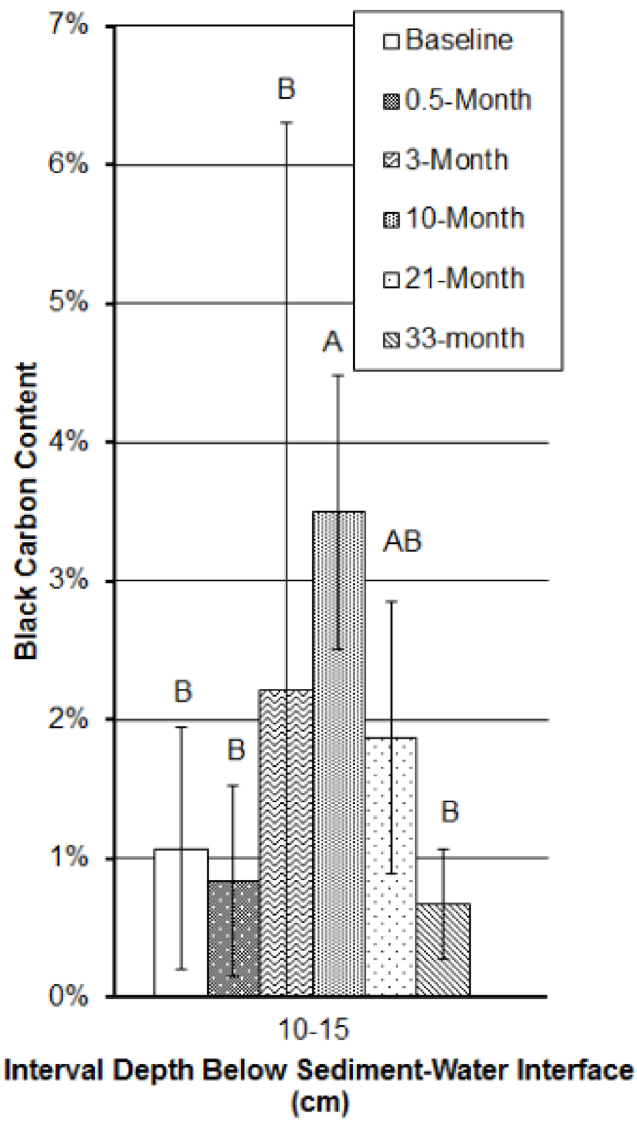


Figure 54 (cont.).Content of BC in Sediment at 10-15 cm Interval below the Sediment-Water Interface.

5.7.2.3 Visual Analysis of the Cores

Visual analysis confirmed aggregate was present in the 10-month monitoring event at 9 of the 10 multi-metric stations (not observed at station 2-MM) with an average depth of 10 cm. The observations in the 21-month event also found aggregate present at 9 stations (again not observed at station 2-MM) and an average depth of 11 cm. In the 33-month event, aggregate was present at all stations with an average depth of 10 cm. These observations are summarized in Table 18.

Table 18. Depth of Aggregate Visually Observed in the Cores Collected for TOC and BC Analyses.

Station	Depth of Aggregate at the 10-Month Event (cm)	Depth of Aggregate at the 21-Month Event (cm)	Depth of Aggregate at the 33-Month Event (cm)
1-MM	10	15	5
2-MM	0	0	10
3-MM	10	10	10
4-MM	15	5	10
5-MM	15	10	15
6-MM	5	10	15
7-MM	15	15	15
8-MM	15	15	5
9-MM	5	15	10
10-MM	5	15	5
Average	10	11	10

5.7.2.4 Diver Survey at Amendment Placement

Diver surveys of the placement area conducted on October 30-31, 2012 and showed the PAC coating had released from the aggregate, as the light-colored aggregate was plainly visible on the seafloor (Figure 55). Initial observations indicated that the amendment was placed effectively over the target area; however, some variation in thickness was observed. Overspray or drift of the amendment slightly beyond the edge of the target area had occurred in some areas.

Figure 55. Photo from the Diver Survey at the Time of Amendment Installation.

5.7.3 Performance Objective (7.): Evaluate Benthic Community Changes in Response to Amendment

5.7.3.1 Benthic Community Census

A summary of the results from the benthic community census are presented in Table 19. The detailed results and calculations are provided in Appendix H.

Table 19. Benthic Community Census Result Summary.

Station Type	Total Abundance	Species Diversity (Shannon-Weiner)	Taxa Richness	Pielou's Evenness	Swartz's Dominance Index	Percent Abundance of 5 Most Abundant Taxa
Baseline Characterization						
Multi-metric	6,600 ± 4,700 (2,200 – 14,000)	2.0 ± 0.4 (1.2 – 2.4)	14 ± 5.3 (6.0 – 23)	0.8 ± 0.1 (0.7 – 0.9)	5.1 ± 1.9 (2.0 – 9.0)	52 ± 12% (24 – 64%)
Reference	1,700 ± 1,000 (1,100 – 3,200)	1.3 ± 0.2 (1.1 – 1.6)	5.0 ± 0.8 (4.0 – 6.0)	0.8 ± 0.1 (0.7 – 0.9)	2.5 ± 0.6 (2.0 – 3.0)	67 ± 10% (58 – 80%)
10-Month Event						
Multi-metric	8,100 ± 8,600 (1,300 – 31,000)	1.8 ± 0.6 (0.4 – 2.5)	13 ± 4.5 (7.0 – 19)	0.7 ± 0.2 (0.2 – 0.9)	4.5 ± 2.2 (1.0 – 7.0)	46 ± 32% (0 – 93%)
Reference	2,800 ± 2,200 (890 – 5,900)	1.9 ± 0.3 (1.7 – 2.3)	9.3 ± 2.4 (6.0 – 11)	0.9 ± 0.1 (0.7 – 1.0)	4.5 ± 1.2 (3.0 – 6.0)	22 ± 6% (14 – 28%)
21-Month Event						
Multi-metric	5,900 ± 7,100 (1,300 – 25,000)	2.0 ± 0.3 (1.5 – 2.6)	13 ± 6.2 (6.0 – 27)	0.8 ± 0.2 (0.5 – 0.9)	5.5 ± 1.6 (4.0 – 9.0)	43 ± 26% (0 – 81%)
Reference	5,600 ± 6,600 (1,000 – 15,000)	1.7 ± 0.5 (1.2 – 2.2)	12 ± 9.9 (4.0 – 26)	0.8 ± 0.2 (0.6 – 1.0)	3.3 ± 1.5 (2.0 – 5.0)	50 ± 38% (0 – 81%)
33-Month Event						
Multi-metric	4,700 ± 5,100 (330 – 14,000)	1.5 ± 0.7 (0.5 – 2.9)	9.5 ± 6.3 (3.0 – 23)	0.7 ± 0.3 (0.3 – 1.0)	3.9 ± 3.1 (1.0 – 11)	59 ± 27% (23 – 95%)
Reference	4,000 ± 5,300 (890 – 12,000)	1.6 ± 0.3 (1.3 – 2.0)	8.3 ± 2.9 5.0 – 12)	0.8 ± 0.2 (0.5 – 1.0)	3.5 ± 1.7 (2.0 – 6.0)	45 ± 46% (0 – 88%)

*Results shown as average ± SD (minimum – maximum)

5.7.3.1.1 Total Abundance

Total abundance was observed to have no significant difference from the baseline characterization to all monitoring events at the amended stations (multi-metric stations). An average increase of 23% from the baseline in the 10-month event was observed for total abundance at the amended stations. However, from the baseline to the 21- and 33-month events, total abundance decreased by 11% and 28% on average at the amended stations, respectively.

No significant difference was observed from the baseline to all monitoring events for the unamended stations (reference stations). On average at the unamended stations, an increase of 65%, 235%, and 139% was observed in the 10-, 21-, and 33-month events compared to the baseline, respectively. Figure 56 shows the observations in the baseline characterization and monitoring events (errors bars represent 1.5 times the IQR). Total abundance was compared to the closest Puget Sound Ambient Monitoring Program (PSAMP) station with similar water depth and sediment texture characteristics (Station 164, WSDOE 2009) and was found to be similar to the baseline and monitoring events with the exception of the lower abundances observed at the reference stations in the baseline characterization and 10-month monitoring event. Total abundance at the reference stations was significantly lower than the multi-metric stations in the baseline characterization. In the 10-, 21- and 33-month events, no significant difference in total abundance between multi-metric and reference stations was observed. Therefore, there is no evidence total abundance was adversely affected by the amendment placement.

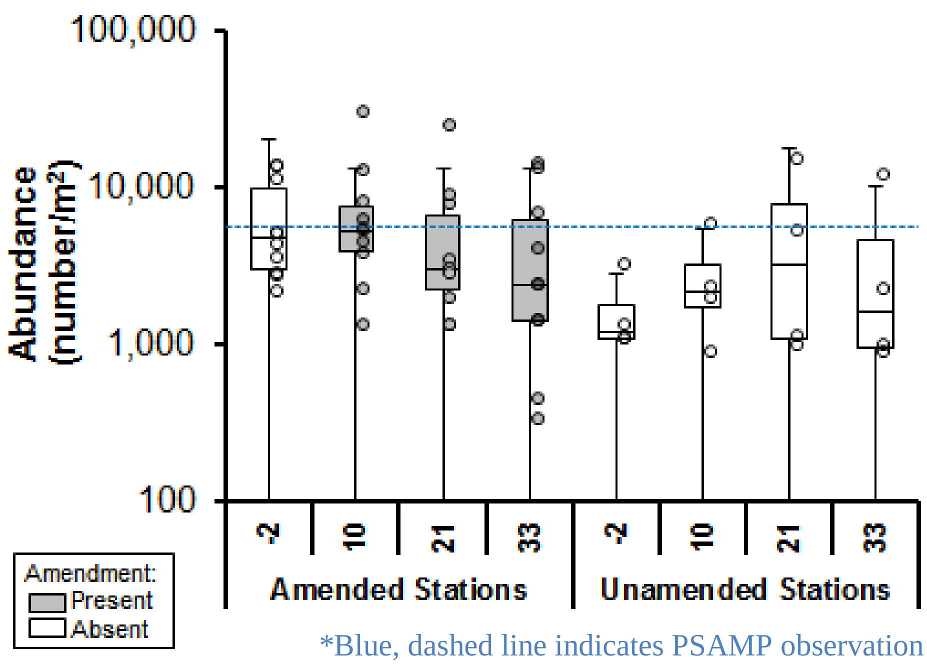


Figure 56. Total Abundance from the Benthic Community Census.

Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

5.7.3.1.2 Species Diversity (Shannon-Weiner)

Species diversity was not significantly different from the baseline to 10- and 21-month monitoring events for the amended stations with an average 9% and 0.3% decrease, respectively (Figure 57). Species diversity was significantly lower in the 33-month event compared to the baseline with an average 26% decrease at the amended stations. A significant increase (average 47%) in diversity was observed in the 10-month compared to baseline at the reference stations. No significant difference was observed in the 21- (average 26% increase) and 33-month (average 20% increase) events compared to baseline at the reference stations. Compared to the nearest PSAMP station, the observations at the amended and unamended stations were similar with the exception of the lower diversity observed at the reference stations in the baseline characterization. Diversity at the reference stations was significantly lower than the multi-metric stations in the baseline characterization. No significant difference between the amended and unamended stations was observed in the 10-, 21-, and 33-month monitoring events. Although a significant decrease in diversity from the baseline to the 33-month event at the amended stations was observed, there was no significant difference between the amended and unamended stations in the 33-month event. Therefore, there is no evidence diversity was adversely affected by the amendment placement.

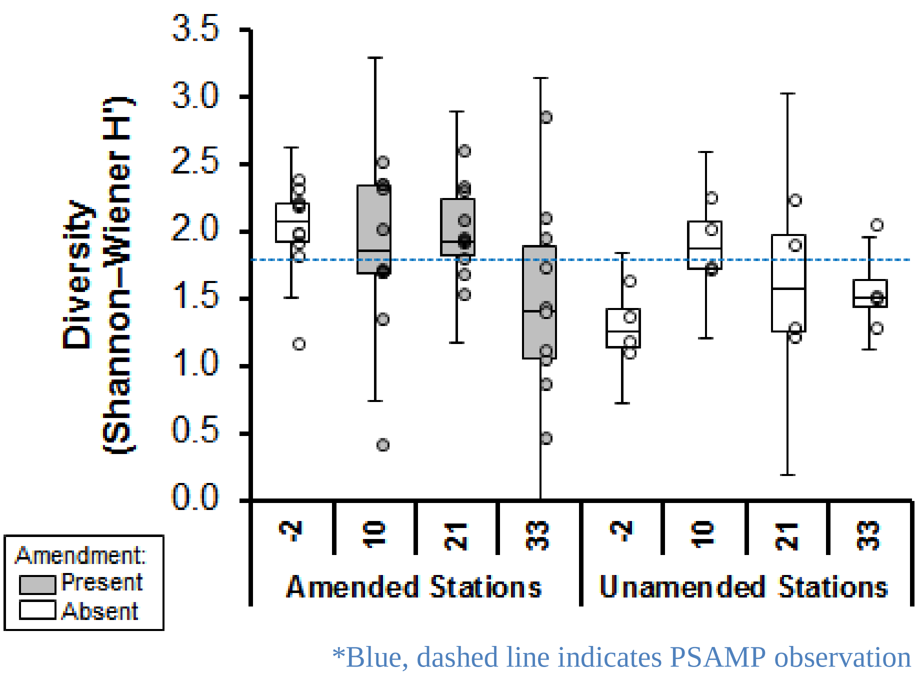


Figure 57. Species Diversity (Shannon-Weiner) from the Benthic Community Census.

Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

5.7.3.1.3 Taxa Richness

Taxa richness was not significantly different from the baseline to the 10- and 21-month events at the amended stations (average decrease of 8% and 4%, respectively). There was a significant decrease from the baseline to the 33-month event (Figure 58, average 32% decrease). No significant difference was observed from the baseline to all monitoring events at the unamended stations (average increase from baseline to 10-, 21-, and 33-month of 85%, 130% and 65%, respectively). In the baseline characterization and all post-remedy monitoring events, the taxa richness was lower than the closest PSAMP station at the multi-metric and reference stations. Taxa richness was significantly higher at the multi-metric stations than the reference stations in the baseline. No significant difference in taxa richness between the amended and unamended stations was observed in the post-remedy monitoring events. Although a significant decrease in richness from the baseline to the 33-month event at the amended stations was observed, no significant difference between the amended and unamended stations was observed in the 33-month event. Therefore, there is no evidence richness was adversely affected by the amendment placement.

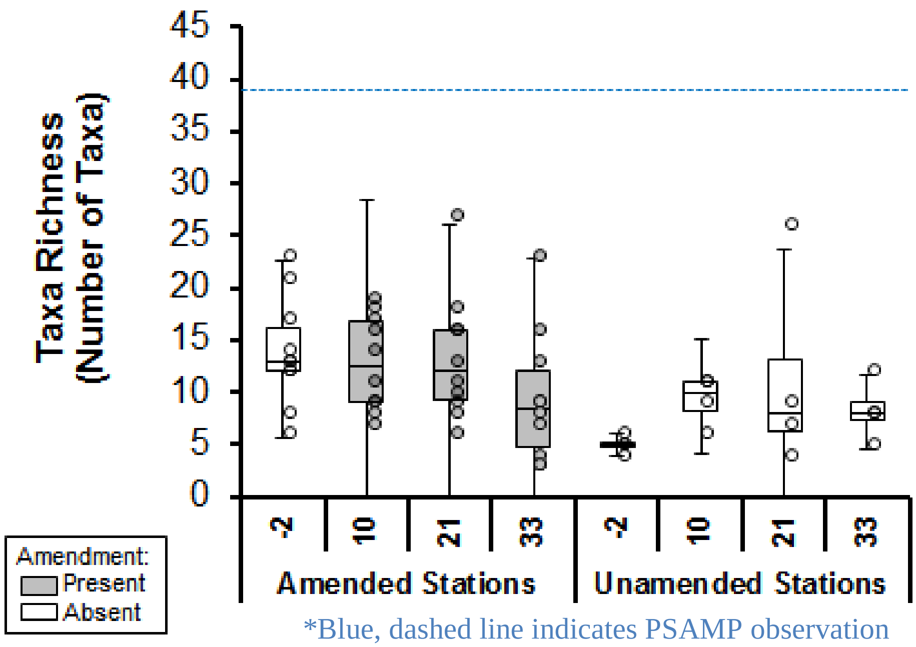


Figure 58. Taxa Richness from the Benthic Community Census. *Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

5.7.3.1.4 Pielou's Evenness

Pielou's evenness was not significantly different from baseline to all monitoring events for the amended and unamended stations (Figure 59) and was similar to the closest PSAMP station. There was no significant difference in evenness between the multi-metric and reference stations for the baseline, 21-month, and 33-month events. Evenness at the amended stations was significantly lower than the unamended stations in the 10-month event (17% lower on average). Although there may be evidence that the amendment reduced evenness at the amended stations in the 10-month monitoring event compared to the unamended stations, the evenness was not significantly different than the baseline characterization at the amended stations. Also, there was no significant difference between the amended and unamended stations in 21- and 33-month events. Therefore, evenness was not adversely affected by the amendment placement.

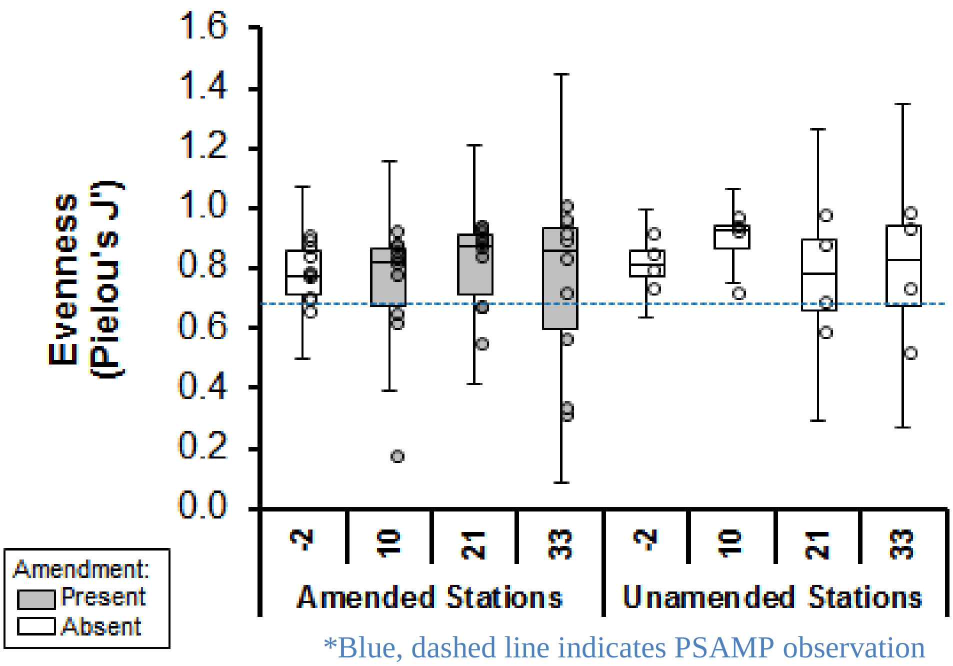


Figure 59. Pielou's Eveness from the Benthic Community Census. *Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

5.7.3.1.5 Swartz's Dominance Index

SDI was not significantly different from the baseline to all monitoring events for both amended and unamended stations (Figure 60). The SDI was generally higher at the closest PSAMP station than at amended and unamended stations for all monitoring events. SDI at multi-metric stations in the baseline was significantly higher than the reference stations (average of 104% higher). No significant difference between amended and unamended stations was observed in the 10-, 21-, and 33-month monitoring events. Therefore, there is no evidence SDI was adversely affected by the amendment placement.

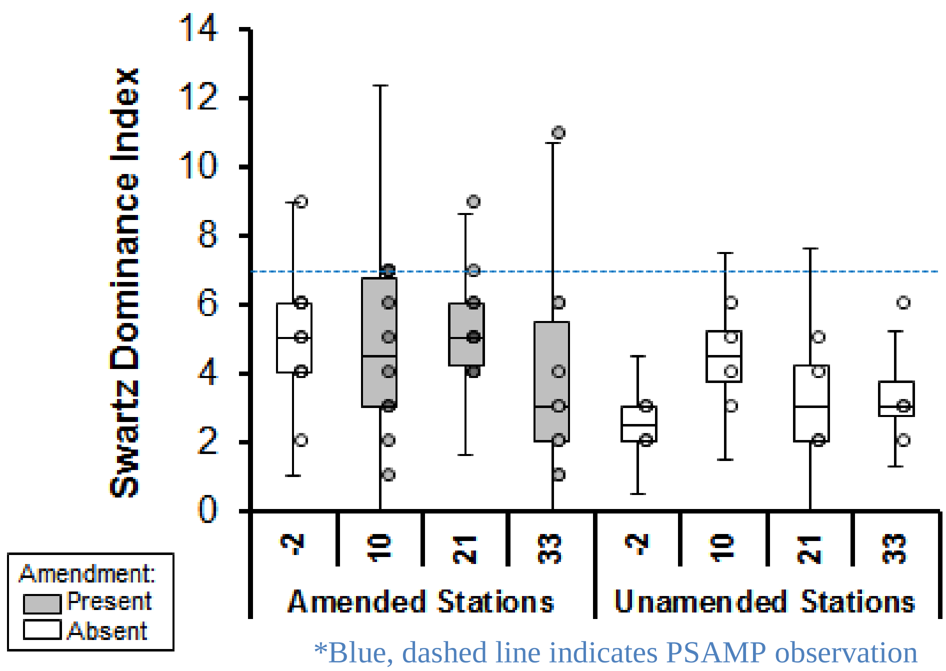


Figure 60. Swartz's Dominance Index from the Benthic Community Census.

Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.

5.7.3.1.6 Percent Abundance of the Five Most Abundant Taxa

The percent abundance of the five most abundant taxa was not significantly different from the baseline to the 10-, 21-, and 33-month events at the amended stations and unamended stations (Figure 61). No significant difference was observed for the baseline characterization or post-remedy monitoring events when comparing the multi-metric and reference stations. Therefore, there is no evidence abundance of the dominant taxa was adversely affected by the amendment placement.

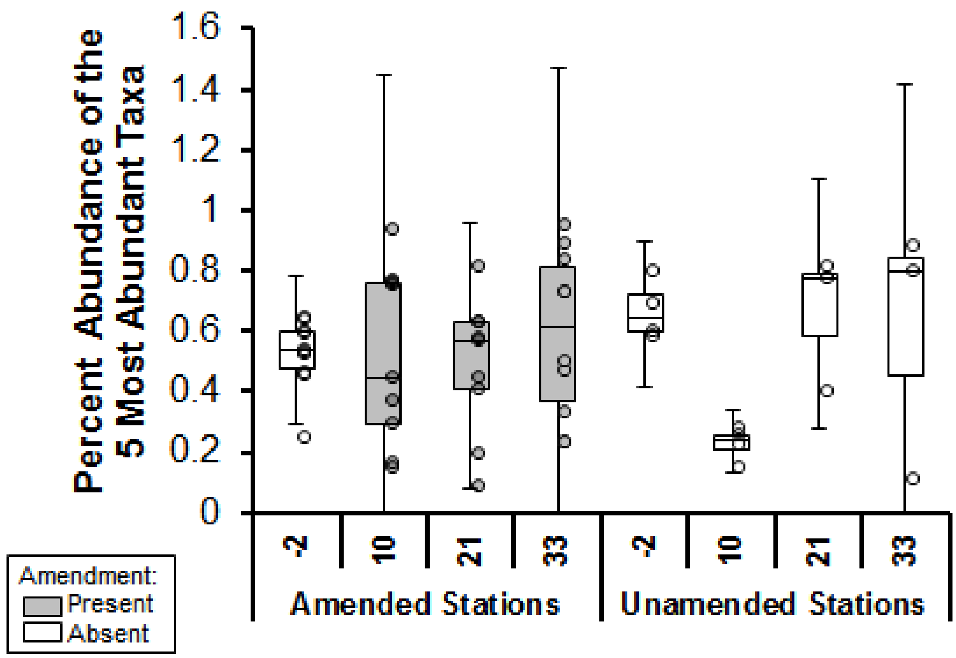


Figure 61. Percent Abundance of the Five Most Abundant Taxa. *Results are plotted as the median (horizontal bar), IQR (limits of boxes are 25th and 75th percentiles), and error bars are 1.5 times the IQR. Data points are plotted as circle symbols.*

5.7.3.2 Sediment Profile Imagery – Benthic Infaunal Succession

The infaunal successional stage was evaluated in the sediment profile images obtained in each SPI survey (reports from Germano and Associates provided in Appendix C). During the baseline survey, 2 months prior to amendment placement, many of the stations had a surface armoring of shell hash along with shell fragments mixed throughout the sediment column; however, presence of Stage 3 taxa (infaunal deposit feeders) was evident at 26 of the 42 stations (62%, total includes indeterminate stations). All of the stations outboard of the pier had dense assemblages of tubes from large sabellid polychaetes that had evidently colonized the area from being removed from the bottom of ship hulls and established themselves in the sediments in the berthing areas. No sabellids were found in any of the images taken underneath the pier. SPI images shown in Figure 62 from Station 5-4 taken before (left) and after (right) cap placement show how placement of the cap material eliminated the assemblage of large sebellid polycheate tubes that were present during the baseline survey (scale: width of each image is 14.5 cm). The infaunal stages at each station are shown in Figure 63.

Figure 62. SPI Images from Station 5-4 Taken Before (Left) and After (Right) Amendment Placement (Germano and Associates 2013a and 2013b).

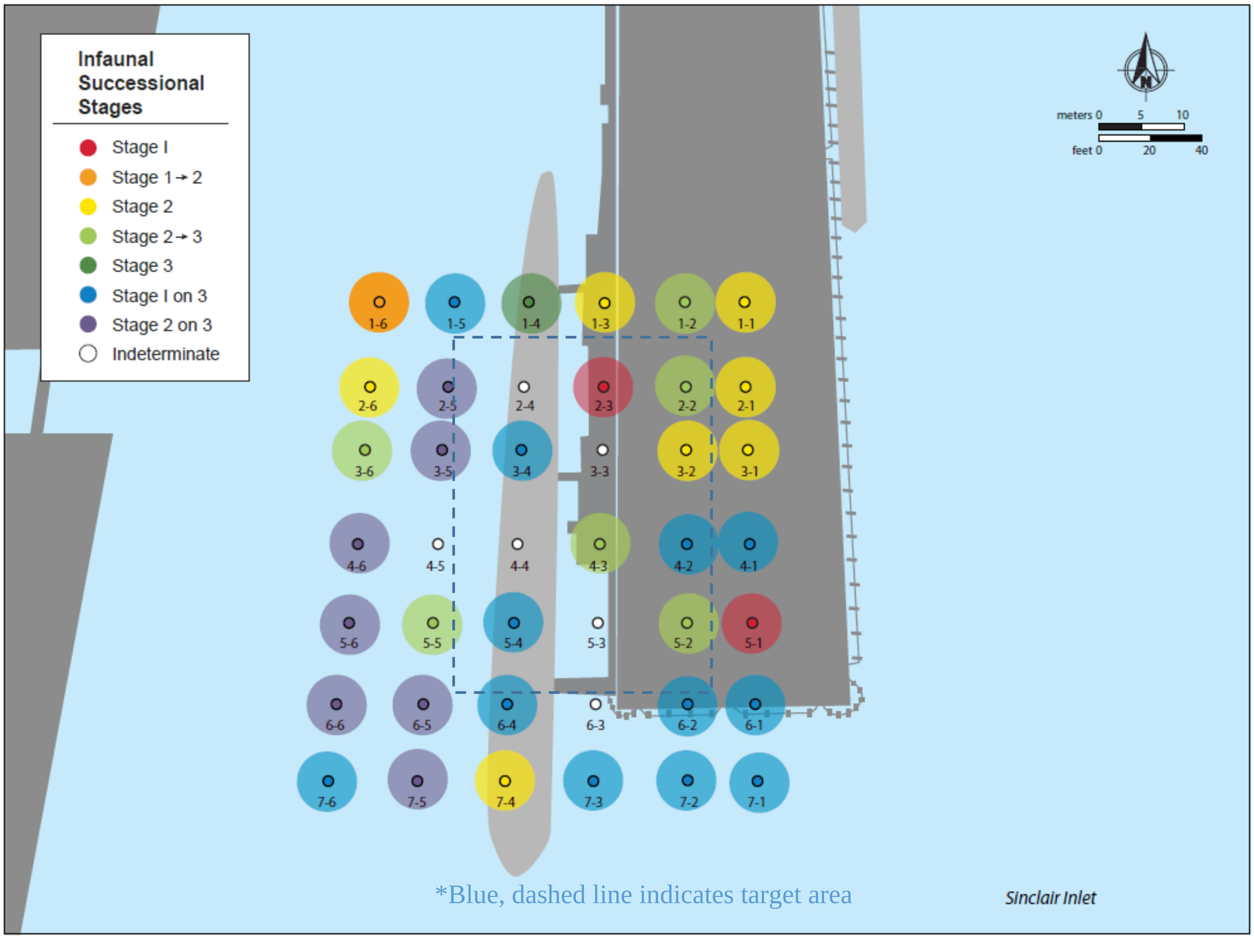


Figure 63. Infaunal Successional Stages during the Baseline Survey (Germano and Associates 2013a).

During the 0.5-month post-placement survey, there was a noticeable change in biological community status compared to baseline conditions because of the recent disturbance to the area from the cap placement. Despite this change, presence of Stage 3 taxa was evident at 19 of the 42 stations (45%). Three of the stations outboard of the pier (Stations 3-4, 4-4, and 5-4) that formerly had dense assemblages of tubes from large sabellid polychaetes in the baseline survey were now devoid of any of those assemblages after cap placement (Germano and Associates 2013b). Infaunal stages for the 0.5-month post placement survey are shown in Figure 64.

In the 10-month post-placement survey, there was a noticeable improvement in biological community status under the pier compared to the 0.5-month post-placement survey, there was retrograde in successional status at some of the stations outboard of the pier. However, presence of Stage 3 taxa was evident at 20 of the 50 stations (40%, Germano and Associates 2014a). Infaunal stages for all stations in the 10-month survey are shown in Figure 65.

In the 21-month survey, there was a noticeable improvement in biological community status under the pier as well as at the stations outboard of the pier compared with the 10-month survey. There

were 8 stations where either prism penetration was too shallow or the profile was disturbed by sampling artifacts where infaunal successional status could not be determined, and there was one station under the pier where there were retrograde habitat conditions compared to 2013 (Station 6-2). However, the presence of Stage 3 taxa was evident at 35 of the 50 stations (70%) indicating recovery of the benthic community (Germano and Associates 2014b). Infaunal stages at all stations in the 21-month survey are shown in Figure 66.

In the 33-month survey, the presence of Stage 3 taxa was evident at about half of the stations sampled, a slight reduction compared to the 21-month survey. There was a noticeable retrograde in biological community status in the berthing area adjacent to the pier compared with the 21-month results. It is unclear if this retrograde is related to the amendment, other physical disturbance from berthing ships, or an unknown source of organic enrichment. There were 7 stations where either prism penetration was too shallow or the profile was disturbed by sampling artifacts where infaunal successional status could not be determined. However, the biggest change in the biological community profile was the widespread presence of clusters of squid eggs on the bottom. These eggs were found at the majority of the stations sampled and were most likely present at the 3 stations under the pier (Germano and Associates 2015). Infaunal stages for the 33-month survey are shown in Figure 67.

The number of stations with Stage 3 taxa evident is summarized in Table 20. The percent of stations with Stage 3 taxa evident within the target area is comparable to the stations outside the target area for the baseline survey. In the 0.5-month survey, the percentage is somewhat lower within the target area compared to outside the target area. In the 10- and 21-month surveys, the percent of stations with Stage 3 taxa is comparable within and outside the target area. In the 33-month survey, the percent of stations with Stage 3 taxa is reduced in the target amendment area, specifically the berthing area where Stage 1 taxa was observed to be present at several stations. The cause of this change is unclear, however it likely caused by physical disturbance from vessel movement near the pier. It would be informative to observe the benthic community for additional monitoring events to understand the duration of this apparent disturbance. While there is variability in successional stage over the 0.5-, 10-, 21- and 33-month post-placement surveys, it appears that the benthic community was not adversely affected as a result of the amendment placement.

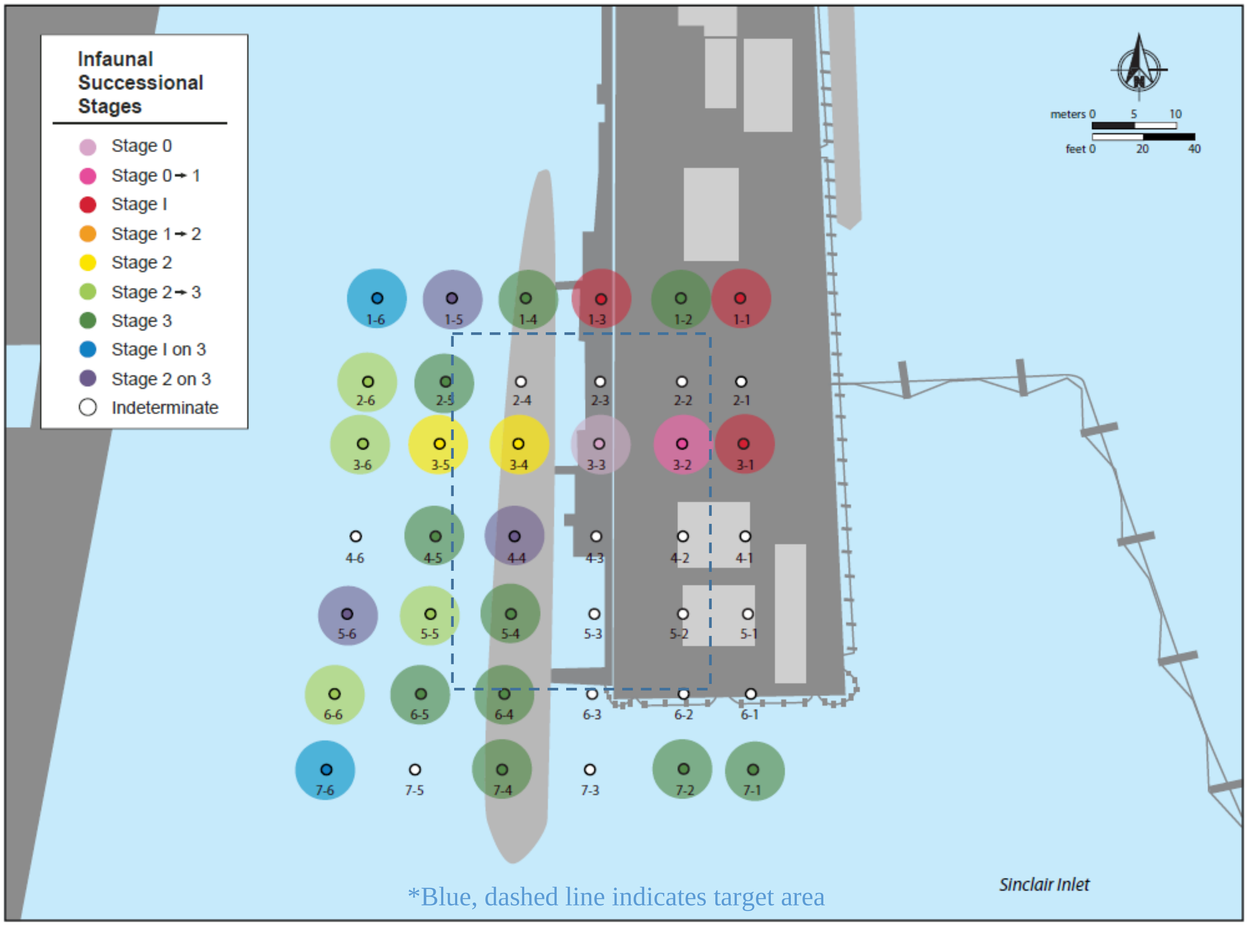


Figure 64. Infaunal Successional Stages during the 0.5-month Post-placement Survey (Germano and Associates 2013b).

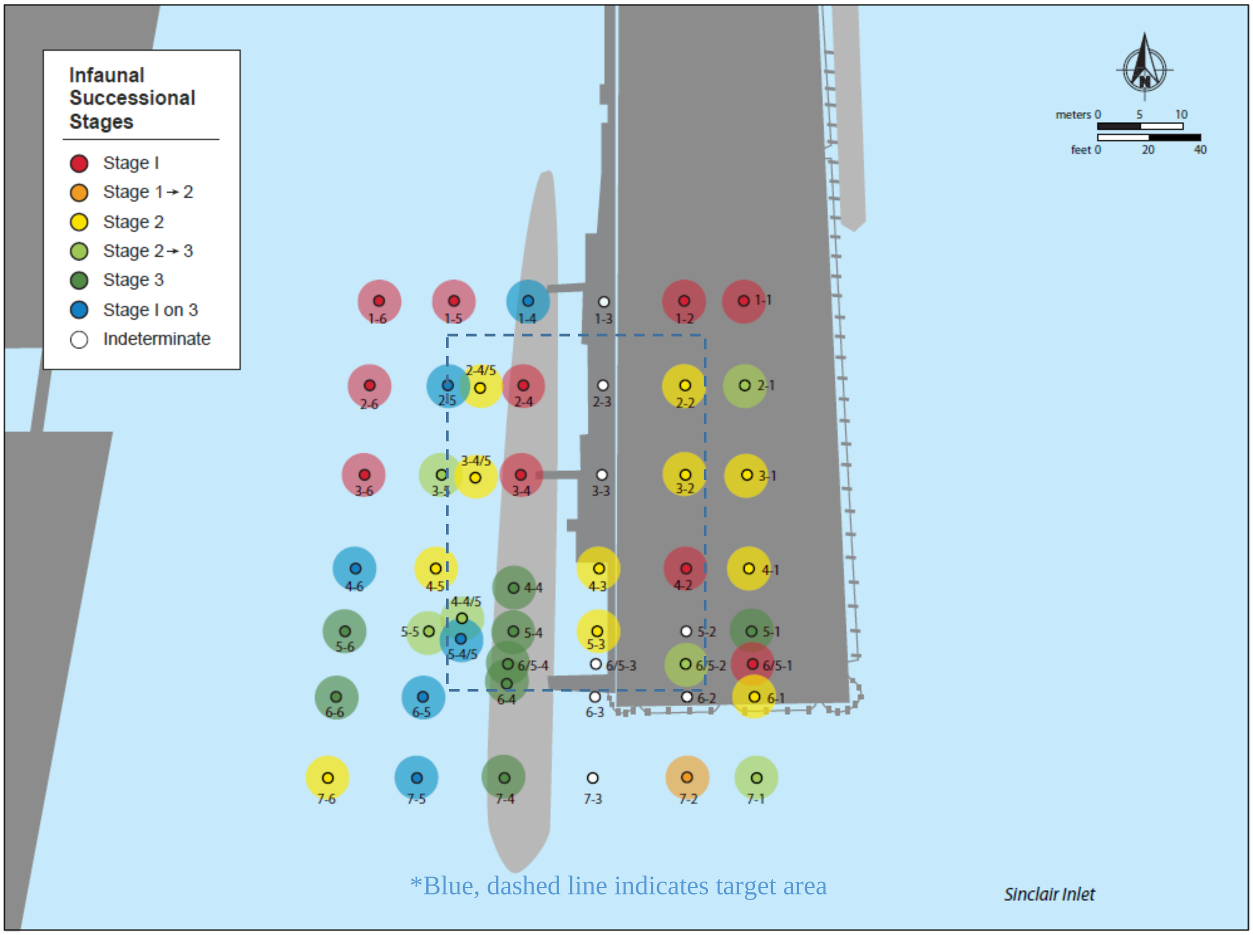


Figure 65. Infaunal Successional Stages during the 10-month Post Placement Survey (Germano and Associates 2014a).

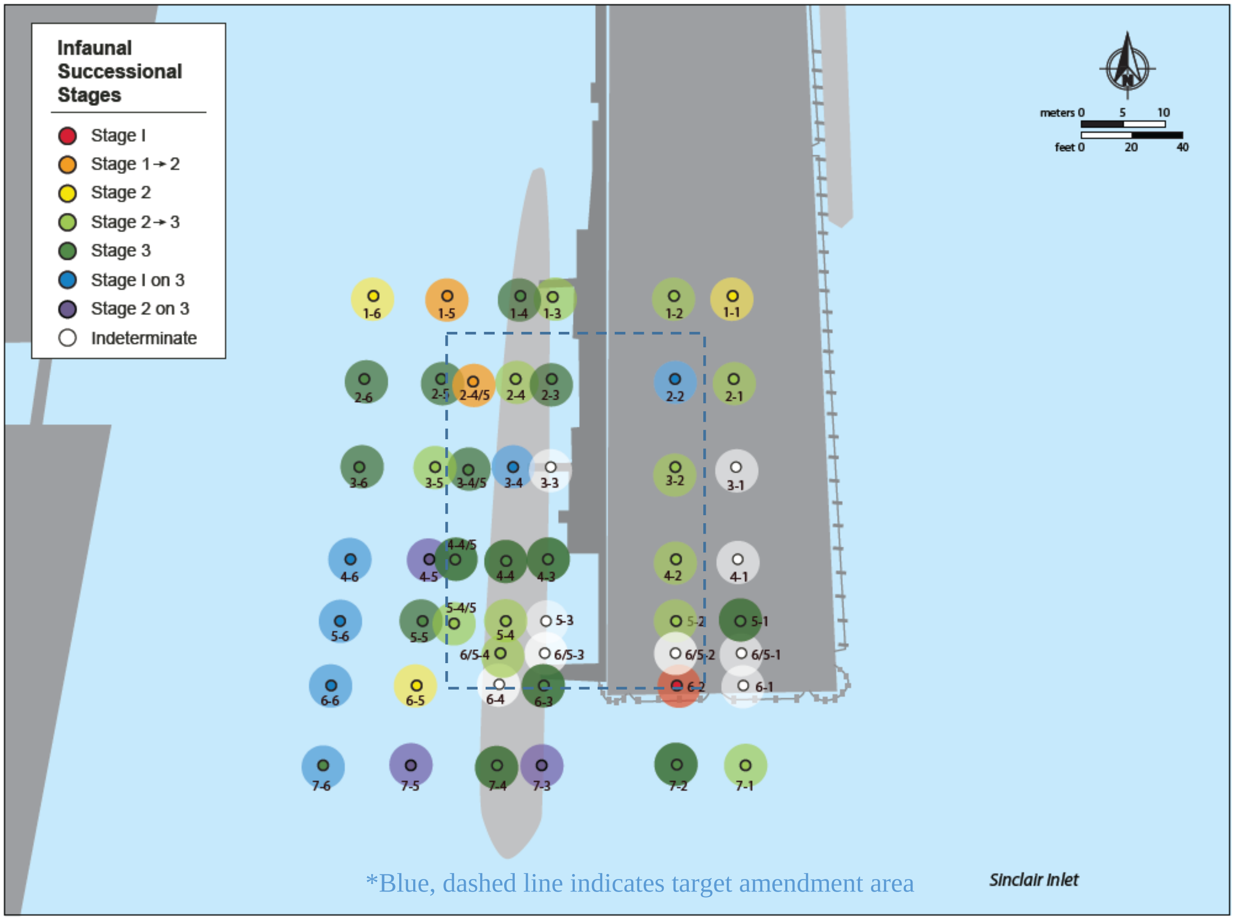


Figure 66. Infaunal Successional Stages during the 21-month Post-placement Survey (Germano and Associates 2014b).

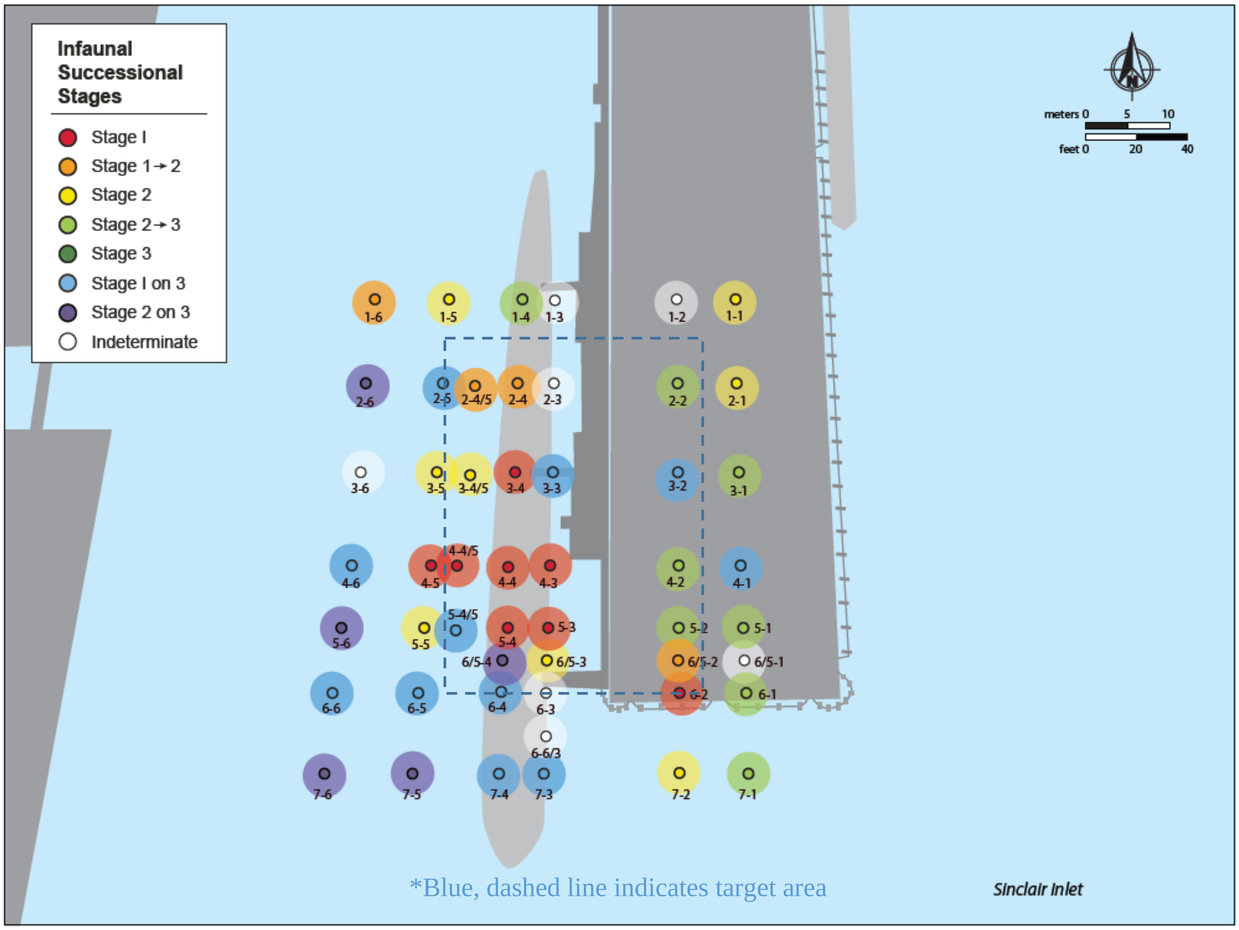


Figure 67. Infaunal Successional Stages during the 33-month Post Placement Survey (Germano and Associates 2015).

The biological mixing depth was observed in the baseline characterization with maximum depth of biogenic activity ranging from 4.1 to 19.1 cm and an average survey maximum biological mixing depth of 12.7 cm. In the 0.5-month survey, the mixing average survey maximum biological mixing depth of remained relatively constant at 10.5 cm (range of 0 to 17.3 cm). In the 10-month survey, the deepest infaunal burrowing was found at the under pier stations in the presence of the amendment and an average maximum depth of biogenic activity was similar to previous surveys at 10.2 cm (range of 0.9 – 18.7 cm). The 21-month survey found similar depths at 12.1 cm on average (range of 4.7 – 20.2 cm) with the deepest burrowing continuing to be under the pier. Average maximum depth of biogenic activity of 10.3 cm was observed in the 33-month survey (range of 3.6 – 16.6 cm), again with infaunal burrowing being the deepest under the pier (Germano and Associates 2013a, 2013b, 2014a, 2014b, 2015).

Table 20. Number of Stations with Stage 3 Taxa.

Survey	Within Target Area			Outside Target Area		
	Number of Stations with Stage 3 Taxa	Total Number of Stations *	Percent of Stations with Stage 3 Taxa	Number of Stations with Stage 3 Taxa	Total Number of Stations *	Percent of Stations with Stage 3 Taxa
Baseline	8	10	80%	18	26	69%
0.5-Month	3	6	50%	16	20	80%
10-Month	7	16	44%	13	26	50%
21-Month	15	17	88%	20	24	83%
33-Month	8	20	40%	16	24	67%

*Excludes stations at which infaunal successional status could not be determined

6.0 PERFORMANCE ASSESSMENT

A summary of the data collected and analysis performed in support of the assessment of performance objectives is summarized in Section 3 Performance Objectives. A summary of the data treatment in support of the assessment of performance objectives is summarized in Section 3 Performance Objectives and detailed in Section 5.6 Sampling Methods. A summary of the results and evaluation in support of the assessment of performance objectives is provided in Section 3 Performance Objectives and Section 5.7 Sampling Results.

Performance objective 1 was the verification of amendment performance in the laboratory prior to demonstration in the field. This was evaluated with *ex situ* bioaccumulation testing with the polychaete worm *Neanthes arenaceodentata* and sediments from Pier 7. Concentrations of total PCB in tissue from the control sediment (unamended) were compared to amended site sediment under a range of mixing conditions (no mix, 24-hour mix, and 1-month mix). The performance objective was met if concentrations of total PCBs in tissue exposed to amended sediment were reduced at least 50% and statistically significantly less than the concentrations in tissue exposed to the control. The performance objective was met for the 24-hour and 1-month mix amendments which are most similar to conditions observed in the field.

Performance objective 2 was the demonstration of amendment associated reduction in contaminant bioavailability in the field. This was evaluated with *in situ* bioaccumulation testing to obtain tissue concentrations and passive sampling to obtain concentrations in sediment porewater. The bioaccumulation testing utilized Sediment Ecotoxicity Assessment Ring (SEA Ring) technology with the polychaete worm *Nephtys caecoides* and bent-nose clam *Macoma nasuta*. *In situ* passive sampling was conducted with solid phase microextraction (SPME) to provide a chemical measure of PCBs in sediment porewater. The performance objective was considered met if concentrations of total PCBs in the 10-, 21-, and 33-month monitoring events were statistically significantly reduced (at least 50% reduction) from concentrations in the baseline. This performance objective was met for total PCBs (Figure 68), with biological and porewater results generally indicating an average decrease in bioavailability of 84% from the baseline. Concentrations of total PCBs in *M. nasuta* tissue were reduced 68%, 82%, and 88% on average in the 10-, 21-, and 33-month events compared to the baseline, respectively. Concentrations of total PCBs in *N. caecoides* tissue in the 10-, 21-, and 33-month events were reduced 87%, 89%, and 97% on average compared to the baseline, respectively. Concentrations of total PCBs in sediment porewater from baseline to 10-, 21-, and 33-month events were reduced 75%, 86%, and 81% on average compared to the baseline, respectively. Total mercury and methylmercury were tracked for informational purposes only, but results were unclear regarding the efficacy of the amendment to reduce mercury or methylmercury bioavailability. Concentrations of total mercury and methylmercury in *M. nasuta* and *N. caecoides* were below risk-based thresholds and generally consistent with ambient/natural levels. Overall, there was a general lack of consistent differences among the monitoring events, indicating the amendment did not have a detectable effect on bioavailability. This does not necessarily indicate activated carbon would be ineffectual in reducing mercury or methylmercury bioavailability in sediments, because it is possible reductions in bioavailability would be more measureable if baseline levels were greatly elevated above ambient/natural levels.

Performance objective 3 was the demonstration of amendment associated reduction in contaminant bioavailability in the field over time. This was evaluated with the same analyses as discussed for performance objective 2, but is focused on the 33-month event. The performance objective was considered met if concentrations of total PCBs in the 33-month event were significantly reduced (at least 50%) from concentrations in the baseline. This performance objective was met for total PCBs (Figure ES-1). The reduction in concentrations of total PCBs in *M. nasuta* tissue from baseline to 33-month event was 88% on average. The reduction in concentrations of total PCBs in *N. caecoides* tissue from baseline to 33-month event was 97% on average. The reduction in concentrations of total PCBs in sediment porewater from baseline to 33-month event was 81% on average. Total mercury and methylmercury were tracked for informational purposes only as discussed in performance objective 2.

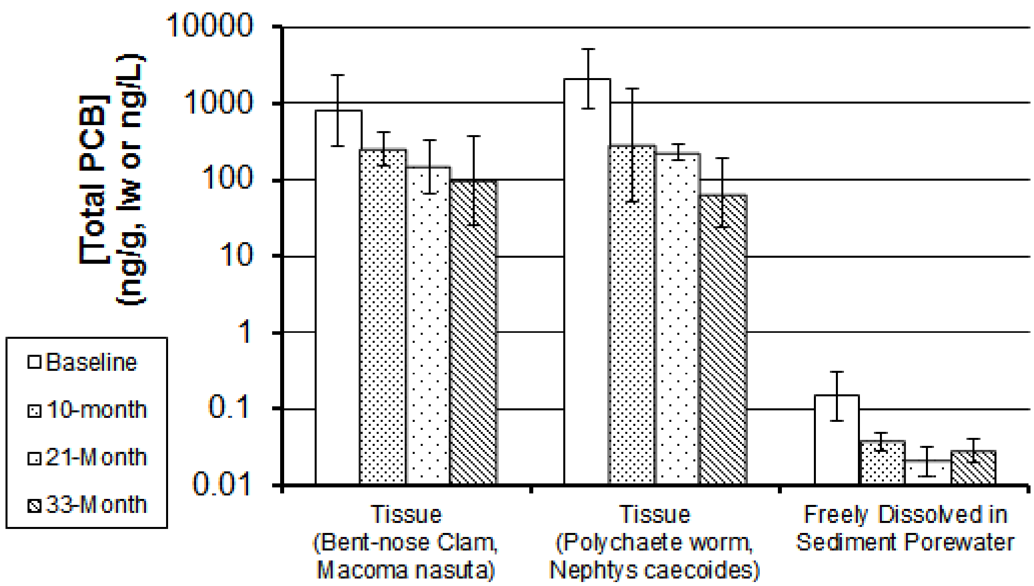


Figure 68. Summary of Reduction in Concentrations of Total PCBs in Tissue and Sediment Porewater. *Results are shown as mean ± 95% CL.*

Performance objective 4 was the demonstration of detectability of amendment using sediment profile imagery (SPI) camera system in the lab prior to demonstration in the field. This was evaluated by obtaining SPI images in sediment for control and the three mixing conditions (no mix, 24-hour, and 1-month). The performance objective was met if the amendment was qualitatively distinguishable from native sediment. This performance objective was met.

Performance objective 5 was the demonstration of the uniform deep water placement of amendment to the target area. This was evaluated with the SPI camera system as well as total organic carbon (TOC) and black carbon (BC) content analysis in sediment cores at three intervals (0-5 centimeters [cm], 5-10 cm, and 10-15 cm below the sediment-water interface). Observations in the baseline characterization were compared to the 0.5-month monitoring event. The performance objective was met if:

1) The amendment was evenly distributed with an approximate target thickness of 2±1 inches.

This was observed with images from the SPI survey.

2) The amendment was present in approximately 90% of the target amendment placement area. This was observed with images from the SPI survey.

3) An increase in TOC and BC content in surface sediments (0-10 cm below sediment-water interface).

This performance objective was met for the approximate thickness (the average thickness was greater than target 4 inches) and met for the presence within the target area (80% of the target area received measurable or trace deposits of AquaGate). Diver survey provided further confirmation the amendment was placed within the target area and the PAC coating was no longer on the aggregate core. An increase in TOC content in surface sediment (0 to 10 cm below sediment-water interface, as the average of the 0-5 cm and 5-10cm intervals) was an average of 50% greater than in the baseline. Based on BC content, placement did not meet the performance objective, as BC content decreased an average of 3% in the surface sediments (0-10 cm below sediment water interface). This may be potentially due to analytical issues with the measurement of BC content and high presence of shell hash in many samples.

Performance objective 6 was the demonstration of the stability of the amendment over time. This was evaluated with the same analyses and success criteria as discussed in performance objective 5 with comparison of observations in the 3- (TOC/BC content only), 10-, 21-, and 33-months and the baseline characterization. Based on SPI surveys, approximately 75%, 65%, and 65% of the target area retained measurable or trace deposits of the amendment with average thicknesses of 6.9 cm, 11 cm, and 8.8 cm, respectively. This performance objective was met for the approximate thickness and met for the presence within the target area (80% of the target area received measurable or trace deposits of AquaGate). This performance objective was met for TOC content in surface sediments (0-10 cm below the sediment-water interface as an average of the 0-5 cm and 10-15 cm intervals) for the 10-, 21-, and 33-month events with increases of 124%, 52%, and 20% on average from the baseline, respectively; however, in the 3-month event an average decrease in TOC content of 2% was observed. This performance objective was met for BC content in the surface sediment (0-10 cm below sediment-water interface); in the 3-, 10-, and 21-month events, average increases of 7%, 91%, and 18% from the baseline were observed; however, an average decrease of 55% was found in the 33-month event.

Performance objective 7 was the evaluation of the native benthic community for changes in response to amendment placement. This was evaluated with comparison of benthic community census results obtained in the baseline characterization and reference stations to the 10-, 21- and 33-month monitoring events. This performance objective was met if there was no observed adverse impact to the benthic community as evaluated with six indices: total abundance, species diversity, taxa richness, Pielou's evenness (J’), Swartz’s dominance index (SDI), and percent abundance of the five most abundant taxa. This performance objective was met.

The SPI surveys found no difference in the percent of stations with evidence of Stage 3 taxa in the baseline, 10-month, and 21-month surveys; however, the percent of stations with Stage 3 taxa within the target area were lower in the 0.5- and 33-month surveys. The cause of the apparent retrograde of successional stage at the berthing area in the 33-month is unknown. Further monitoring of the Site would help understand if the retrograde was due to a temporary

condition at the Site (such as temporary organic enrichment or physical disturbance) or is sustained for a longer duration.

7.0 COST ASSESSMENT

The overall objective of this project was to demonstrate and validate placement, stability, performance and persistence of reactive amendments for treatment of contaminated sediments in active DoD harbor settings. As part of the evaluation of performance, a cost evaluation and comparison to alternative contaminated sediment treatment methods, such as dredging, capping, and MNR is provided here.

7.1 COST MODEL

7.1.1 Cost Model for Demonstration of AquaGate Amendment

The area of demonstration at Pier 7 is 21,850 sq. ft. (0.5 acres) and includes placement of AquaGate under the pier around pilings and in berthing area adjacent to the pier. The costs associated with placement of the AC amendment include placement and monitoring costs for the demonstration project (Table 21). It should be noted shipment costs in Table 21 are from Ohio to Washington and (approximately $300 per ton for freight shipment) and can be considered more expensive than typical shipment costs. Typical costs for shipment are approximately $100 per ton ($2,500 per truck load), for 141 tons of AquaGate, a total shipment cost of $14,100 would be incurred under a typical shipment scenario. Field work costs below do not include management, oversight, and coordination. Uncertainties in applying this cost estimate for AquaGate include variability in shipping costs depending on site location and complexity of placement.

7.1.2 Cost Model for Implementation of AquaGate Amendment

Implementation of the technology as a full-scale remedy in the future would require less rigorous monitoring methods as efficacy of the amendment as a remedy would be established. For implementation, it is assumed that contaminant reduction would be measured with ex situ bioaccumulation bioassays. Also the sediments would be monitored by bulk sediment chemistry and TOC and BC analysis. A cost model for implementation of AquaGate to other projects is presented in Table 22. These costs are an estimate and may be lower or higher when specific site considerations are taken into account. For example, for a 5 acres site AC application, Patmont et al. (2015) estimated field placement to be up to $3.72 per sq. ft. compared to $9.29 per sq. ft. estimated here and $0.93 per sq. ft. for long term monitoring compared to $13.73 per sq. ft. estimated here. It is important to note, costs will vary based on site and project specific needs.

Table 21. Cost Model for Demonstration of the AquaGate Amendment.

Cost Element	Costs	
Baseline Characterization	Field Work	$97,000
	Dive Support	$27,000
	Laboratory Analysis	$59,000
	Baseline SPI survey	34,000
	Reporting	$40,000
	Total	**$257,000**
Placement	AquaGate $2.90/sq. ft. (based on $450/ton and areal amendment density of 12.9 lbs/sq. ft.)	$63,000
	Shipment (from Ohio to Washington)	$42,000
	Staging and placement of amendment	$140,000
	Verification of placement (SPI survey)	$34,000
	Total	**$279,000**
	Total per sq. ft.	**$12.77**
Monitoring (3 Events)	Field Work	$97,000
	Dive Support	$27,000
	Laboratory Analysis	$59,000
	Monitoring SPI survey	$34,000
	Reporting	$40,000
	Total per Event	**$257,000**
	Total	**$771,000**
	Demonstration Total	**$1,307,000**

Table 22. Cost Model for Implementation of AquaGate Amendment.

Cost Element	Costs	
Baseline Characterization	Field Work	$50,000
	Bioassay and Chemistry Analysis	$30,000
	Reporting	$20,000
	Total	**$100,000**
Placement	AquaGate $2.90/sq. ft. (based on $450/ton and areal amendment density of 12.9 lbs/sq. ft.)	$63,000
	Shipment*	$0
	Staging and placement of amendment	$140,000
	Total	**$203,000**
	Total per sq. ft.	**$9.29**
Monitoring (6 Events)	Field Work	$45,000
	Bioassay and Chemistry Analysis	$15,000
	Reporting	$15,000
	Total per Event	**$75,000**
	Total	**$450,000**
	Implementation Total	**$753,000**

* For full-scale implementation, it is assumed larger quantities of AquaGate would be either produced or supplied near or onsite to eliminate freight costs

7.2 COST DRIVERS

Cost drivers to consider in selecting this technology include:

- **Shipment** of material will vary in cost by amount required and the location of the project relative to product distribution centers. In addition, for most full-scale projects, near or onsite production of AquaGate can be performed, which would minimize or eliminate shipment costs.
- **Placement** costs can vary significantly based on the complexity of the site including considerations for bathymetry, currents, infrastructure, and other considerations as well as site access and logistical considerations. In addition, most full-scale projects will benefit from improvements in efficiency of material handling and placement, potentially providing significant cost per square foot reductions.
- **Monitoring** is needed to ensure performance has met remedial action objectives and include field sampling and laboratory analysis. The monitoring requirements would vary based on site specific needs and selection of methods to monitor the site could be influenced by factors such as water depths, currents, and site access.

7.3 COST ANALYSIS

To evaluate and compare the costs of AC amendment with alternative remedies, three hypothetical sites are considered. In all cases, long-term monitoring at the site is expected to be required to ensure remedy effectiveness. These costs are driven by labor, equipment, laboratory analyses, supplies, and transportation costs, but would not vary significantly among remedy selection for dredging, capping, and AC amendment ($75,000 per event). However, MNR typically incurs more expensive monitoring ($100,000 per event). For dredging, one monitoring event is assumed to take place to ensure post-construction targets are met, and a second event at year five to insure long-term remedy effectiveness. For capping and AC amendment, it is assumed that one post-construction monitoring event would take place, followed by two performance monitoring events in the first five years, and one event every five years after that out to 20 years. For MNR, we assume a basline event to establish current conditions followed by one event every five years out to 30 years. Dredging costs below do not consider additional sediment volumes for bulking and overdredge allowance. All costs discussed below have been based on professional judgement from project experience. There is still significant uncertainty as to the monitoring requirements associated with AC amendments due to the lack of long-term data on performance.

7.3.1 Site 1

Site 1 represents a large (5 acre) contaminated sediment site within deep waters of a harbor complex. Remedy selection must consider the presence of high levels of refuse (must be removed prior to dredging), infrastructure (such as piers and pilings) in the area of remedy, and dredged materials which must be managed as hazardous wastes. The sediments are contaminated from the sediment bed surface to 1 foot below the sediment-water interface. The site is potentially subject to scour from ship movement and currents. A comparison of costs for remedies at Site 1 is summarized in Table 23.

Table 23. Cost Comparison for Remedies at Site 1.

Remedy	Cost Element	Costs	
AquaGate Activated Carbon	Placement costs (product, shipping, staging and placement) Monitoring costs (Post construction + 5 events)	Based on implementation placement cost of $9.29 per sq. ft. $75,000 per event	Total placement cost of $2,473,000
Dredging	Traditional dredging in open water, diver operated suction dredge under piers, removal of debris from the dredge area, management of material as hazardous waste, and includes all mobilization, demobilization and transportation costs Monitoring costs (Post construction + year 5)	Based on best professional judgement, estimated at $400 per cubic yard $75,000 per event	Total dredging cost of $3,380,000

7.3.1.1 AquaGate Activated Carbon Amendment

Based on the per sq. ft. costs determined to be $9.29 per sq. ft., the placement cost for this site would total $2,023,000. Monitoring costs ($75,000 per event for six events) would increase costs by $450,000.

7.3.1.2 Dredging

Based on the nature of this site, specifically the infrastructure and pier pilings which would require diver support with a portable dredge and the cost of management as hazardous waste, costs associated with dredging would be $400 per cubic yard (cy). This cost is based on traditional dredging in open water, diver operated suction dredge under piers, removal of debris from the dredge area, management of material as hazardous waste, and includes all mobilization, demobilization and transportation costs. Note, dredging costs do not include post-dredge cover materials to control residuals from resuspension of dredge material, if required. Based on the size of the site and dredging to 1 foot below the sediment-water interface, 8,070 cy would be dredged for a total cost of $3,230,000 is estimated. Monitoring costs ($75,000 per event for two events) would increase costs by $150,000.

7.3.1.3 Capping

Due to the nature of the site, capping is not a feasible option. Ship traffic is likely to disturb cap material and the required water depth for navigation prevents adding sufficient cap and armoring.

7.3.1.4 MNR

Due to the nature of the site, MNR is not a feasible option. The area is not depositional due to ship traffic; therefore, the material would not be kept in place over the time frame needed for MNR to occur.

7.3.2 Site 2

Site 2 represents a medium-sized (3 acre) contaminated sediment site in a developed, coastal marine environment. Remedy selection must consider the steep slopes along the shore, high tidal flows and dredging disposal as subject to upland management (non-hazardous), and infrastructure in the area of remedy. Sediment contamination extends down to 1 foot below the sediment-water interface. There is little to no refuse present. A comparison of costs for remedies at Site 2 is summarized in Table 24.

Table 24. Cost Comparison for Remedies at Site 2.

Remedy	Cost Element	Costs	
AquaGate Activated Carbon	Placement costs (product, shipping, staging and placement) Monitoring costs (Post construction + 5 events)	Based on demonstration placement cost of $9.29 per sq. ft. $75,000 per event	Total placement cost of $1,664,000
Dredging	Traditional dredging in open water, diver operated suction near infrastructure, upland management of dredged material, and includes all mobilization, demobilization and transportation costs. Monitoring costs (Post construction + year 5)	Based on best professional judgement, estimated at $300 per cubic yard $75,000 per event	Total dredging cost of $1,600,000
Capping	Placement (sand cap and significant armoring) Monitoring costs (Post construction + 5 events)	Based on best professional judgement, estimated at $500,000 per acre $75,000 per event	Total placement cost of $1,950,000

7.3.2.1 AquaGate Activated Carbon Amendment

Based on the per sq. ft. costs as determined by the demonstration project of $9.29 per sq. ft., the placement cost for this site would total $1,214,000. Monitoring costs ($75,000 per event for six events) would increase costs by $450,000.

7.3.2.2 Dredging

Based on the nature of this site, specifically the lack of refuse for removal and the upland management of dredged material, this site would be expected to have a moderate cost of $300 per cy. Based on the area of the site and depth sediment contamination, 4,840 cy would be dredged for a cost of $1,450,000. Monitoring costs ($75,000 per event for two events) would increase costs by $150,000.

7.3.2.3 Capping

Capping is generally estimated to cost $9.00 to $15 per sq. ft., or $350,000 to $700,000 per acre. This cost is driven by the cost of material, the level of armoring needed, and the ability to place cap material with relative ease. A level of uncertainty in cap longevity and effectiveness exists due to the tidal nature of the site. Considering the high tidal flows in this area and the steep slopes, it is estimated a significant level of armoring would be required and a cost of $500,000 per acres is assumed. The total cost of capping placement would be $1,500,000. Monitoring costs ($75,000 per event for 6 events) would increase costs by $450,000.

7.3.2.4 MNR

Due to the nature of the site, MNR is not a feasible option. The area is not depositional due to tidal flows; therefore, deposition of clean sediments is unlikely to occur to a sufficient degree.

7.3.3 Site 3

Site 3 represents a small (1 acre) site along a flat bottom of a quiescent environment. Remedy selection must consider the highly depositional environment, dredged material upland disposal with minimal pretreatment, and contamination in sediments from the surface to 1 foot below the sediment-water interface. A comparison of costs for remedies at Site 3 is summarized in Table 25.

Table 25. Cost Comparison for Remedies at Site 3.

Remedy	Cost Element	Costs	
AquaGate Activated Carbon	Placement costs (product, shipping*, staging and placement) Monitoring costs (Post construction + 5 events)	Based on demonstration placement cost of $11.21 per sq. ft. $75,000 per event	Total placement cost of $938,000
Dredging	Traditional dredging in open water, upland disposal of dredged material (minimal pretreatment) includes all mobilization, demobilization and transportation costs Monitoring costs (Post construction + year 5)	Based on best professional judgement, estimated at $150 per cubic yard $75,000 per event	Total dredging cost of $392,000
Capping	Placement costs (sand cap and minimal armoring) Monitoring costs (Post construction + 5 events)	Based on best professional judgement, estimated at $350,000 per acre $75,000 per event	Total placement cost of $800,000
MNR	Baseline monitoring, followed by 30 years of monitoring every 5 years	$100,000 per event	Total MNR costs of $600,000

*Shipping for small sites is assumed since material would not likely be produced onsite.

7.3.3.1 AquaGate Activated Carbon Amendment

Based on the per sq. ft. costs as determined by the demonstration project of $11.21 per sq. ft., the placement cost for this site would total $488,000. Monitoring costs ($75,000 per event for six events) would increase costs by $450,000.

7.3.3.2 Dredging

Based on the nature of this site, specifically the lack of debris for removal, and the upland disposal of dredged material assuming minimal pre-treatment (dewatering not needed due to nearby disposal facility), this site would be expected to have a lower cost per cy at $150 per cy. Based on the surface area and depth of contamination, 1,610 cy of dredged material is estimated for a total cost of $242,000. Monitoring costs ($75,000 per event for two events) would increase costs by $150,000.

7.3.3.3 Capping

As noted above, capping is generally estimated to cost $9.00 to $15 per sq. ft., or $350,000 to $700,000 per acre. As this is not an erosional environment and the material has a low level of contamination, little armoring would be required and the cost is estimated at $350,000 for the one acre site. Monitoring costs ($75,000 per event for six events) would increase costs by $450,000.

7.3.3.4 MNR

As this is a highly depositional environment, MNR is a feasible option. Largely, costs associated with MNR are the long-term monitoring costs. Long term monitoring would be required under any remedy scenario; however, monitoring would likely be more expensive, more frequent and for a longer time frame with MNR. For the purposes of this assessment, it is assumed that monitoring would include a baseline event followed by five additional events, once every five years out to 30 years for a total of six events. Assuming a cost of $100,000 per event, the total cost would be $600,000. The frequency and length of monitoring can be highly variable and site specific, adding uncertainty to this assessment.

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8.0 IMPLEMENTATION ISSUES

In situ remediation of HOC-impacted sediments with AC has been demonstrated to meet placement objectives for target area and thickness in deep waters as well as stability to remain in place over 3 years in an active shipyard. In this demonstration, AquaGate has been shown to reduce concentrations of PCBs in tissue and sediment porewater in the third year following placement in surface sediment by 81 to 97%. Most benthic invertebrate bioaccumulation studies of AC have shown reductions in concentrations of HOCs in tissue ranging from 70-90% compared to untreated control sediment (Ghosh et al 2011). AC amendment as a contaminated sediment remedy is of great interest to the research community as there have been 25 field studies of AC *in situ* treatment of contaminated sediments in the past 10 years (Patmont et al. 2015). *In situ* reactive amendment with AquaGate is well suited to be implemented in a variety of environmental conditions from shallow, quiescent, flat bottom settings to deep water, variable or sloping water depths, tidal environments with active vessel traffic and infrastructure. This technology would be of great interest as a remedy to HOC-impacted (e.g. PCBs, PAHs, and pesticides) surface sediments in association with Superfund sites and sites implementing remediation in response to equivalent state and local regulations (e.g. Clean and Abatement Orders, Total Maximum Daily Loads, etc.) associated with contaminated surface sediments. *In situ* treatment technology may be limited to sites with contamination to depths within the site specific bioturbation mixing zone (generally 10 to 20 cm below sediment-water interface) unless it is determined that there is little or no advective transport of contaminant from depths below the bioturbation mixing zone. AquaGate has an advantage in the ability to place amendments around infrastructure (e.g. piers and bulkheads) where dredging may be found to be more expensive or infeasible. Another advantage of AquaGate is the ability to place the amendment in navigational channels and berthing areas where capping may be infeasible due to water depth requirements. Costs of implementing AquaGate are competitive with alternative remedial methods; however, as with selection of any remedy, cost is depending on site specific conditions and complexity. Additionally, AquaGate has an advantage as a green remediation strategy which is of interest to the USEPA to minimize environmental footprints after cleanup.

Placement of *in situ* reactive amendment to sediments at Pier 7 presented significant challenges associated with amendment placement in active harbors including security access, scheduling, deep water placement, working near and under waterfront structures, complex bathymetry and dredge cuts in berthing areas, strong and variable tidal currents, and possible disturbance from ship movement and other harbor activities. Also, as with any pilot project, the small size of the area limited the ability of the operator to gain efficiency or improve the potential uniformity or coverage within the placement area. In total, 141 tons of AquaGate were placed on surface sediments at Pier 7 within 4 days from the arrival of the tugs to the verification of the placement by US Navy divers. There are improvements that could be made to placement, such as achieving placement within the entire target area and avoiding placement in areas outside the target area. Additionally, the evenness of the amendment thickness could be improved to place a more uniform distribution. Monitoring at Pier 7 was limited by diver assistance for deployment and retrieval of the SEA Rings and passive samplers. Also, measurements of TOC and BC content in sediment with presence of shell hash presented further challenges.

Although AC has been shown for decades to be effective at treatment of air, water, and wastewater, there remains some uncertainty as to the long term effectiveness of sequestration treatment in the field. Because of public perception and a predisposition by the regulatory community, dredging continues to be the most common and accepted means of sediment remediation. Any remedy that leaves untreated contaminants in place, such as *in situ* sequestration, may have the potential for risk of re-exposure of the contaminants. A similar risk would be encountered for sites utilizing MNR, capping, or dredging when high concentrations in residuals are left in place. However, the risk from potential effects of re-exposure may be less if low concentrations of contaminants remain in the sediment.

It is believed that further research is still required. However, since the initiation of this project, the application of *in situ* sequestration at full-scale has been performed successfully. Long-term monitoring of these sites will be required to further support the expanded application of this technology.

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APPENDIX B AQUAGATE+PAC™ SPECIFICATIONS

AquaGate+PAC

AquaGate+PAC™

Background

AquaGate+PAC (Powdered Activated Carbon) is a patented, composite-aggregate technology resembling small stones typically comprised of a dense aggregate core, clay or clay-sized materials, polymers, and fine-grained activated carbon additives.

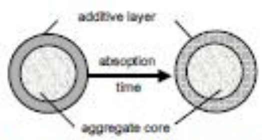

Figure 1. Configuration of PAC-coated particle.

AquaGate+PAC serves as a delivery mechanism to reliably place reactive capping materials into aquatic environments.

Product Specifications

Aggregate:	Nominal AASHTO #8 (1/4-3/8") or custom-sized to meet project-specific need * Limestone or non-calcareous substitute, as deemed project-appropriate
Clay:	Bentonite (or montmorillonite derivative) ** Typically 5 – 10% by weight*
Activated Carbon:	Powdered – Iodine Number 800 mg/g (minimum) ◦ 99% (minimum) through 100 mesh sieve ◦ 95% (minimum) through 200 mesh sieve ◦ 90% (minimum) through 325 mesh sieve ** Typically 2 – 5% by weight*
Binder:	Cellulosic polymer
Permeability:	1×10^{-1} to 1×10^{-2} cm/sec
Dry Bulk Density:	85 – 90 lbs/ft^3

AquaBlok® Composite Particle System

For more information, Contact AquaBlok, Ltd. at:

Phone: (800) 688-2649
Email: services@aquablokinfo.com visit us at our
Web: www.aquablokinfo.com

Last Revised: January 1, 2010

WPH®
Powdered Activated Carbon

CALGON
CALGON CARBON CORPORATION

Description

WPH® is a virgin, high performance powdered activated carbon (PAC) specifically designed to treat potable water. WPH® meets or exceeds all applicable AWWA standards per specification B-604-05, and is certified to ANSI/NSF Standard 61 for use in potable water treatment.

Applications

WPH® powdered activated carbon is ideally suited for removing taste and odor-causing compounds such as geosmin and methylisoborneol (MIB), as well as herbicides and pesticides such as alachlor, atrazine, and simazine, plus many other soluble organic chemical compounds. It can also be used to treat industrial wastewaters and numerous process applications to remove refractory organic chemicals.

Design Considerations

Powdered carbon is generally mixed with raw water in dosages ranging between 5 and 50 ppm. Longer mixing times result in lower doses. Similarly, higher activity carbons usually require lower doses. For the most cost-effective treatment, PAC should be fed at a point which allows the longest amount of contact time between the powdered carbon and the raw water.

Specifications

Iodine Number	800 mg/g (min)
Moisture as packed by weight	8% (max)
Screen Size by weight, U.S. Sieve Series	
Through 100 mesh	99% (min)
Through 200 mesh	95% (min)
Through 325 mesh	90% (min)

Safety Message

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low oxygen spaces should be followed, including all applicable Federal and State requirements.

Features	Benefits
Bituminous-based raw material	Pore structure provides a wider range of contaminant removal capabilities relative to other starting materials.
Free flowing powdered carbon	Works well in wet or dry injection systems.
High grind	Enables more rapid dispersion in water.

CALGON
CALGON CARBON CORPORATION

Making Water and Air Safer and Cleaner

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Your local representative

Mesh vs. Micron Comparison Chart

Mesh	Microns	Inches	Millimeters	Netafim Disk Ring Color	Object
3	6730	0.2650	6.730		
4	4760	0.1870	4.760		Gravel starts at 4.75 mm
5	4000	0.1570	4.000		
6	3360	0.1320	3.360		
7	2830	0.1110	2.830		
8	2380	0.0937	2.380		
10	2000	0.0787	2.000		
12	1680	0.0661	1.680		
14	1410	0.0555	1.410		
16	1190	0.0469	1.190		Eye of a Needle = 1,230 microns
18	1000	0.0394	1.000		
20	841	0.0331	0.841		
25	707	0.0280	0.707		
28	700	0.0280	0.700		
30	595	0.0232	0.595		
35	500	0.0197	0.500		
40	420	0.0165	0.420	Blue	
45	354	0.0138	0.354		
50	297	0.0117	0.297		
60	250	0.0098	0.250		Fine Sand
70	210	0.0083	0.210		
80	177	0.0070	0.177	Yellow	
100	149	0.0059	0.149		
120	125	0.0049	0.125	Red	
140	105	0.0041	0.105	Black	
	100	0.00394	0.100		Beach Sand (100 - 2,000 microns)
170	88	0.0035	0.088		
200	74	0.0029	0.074		Portland Cement
	70	0.00276	0.070	Brown	Average Human Hair (70 - 100) / Grain of Salt
230	63	0.0024	0.063		
	55	0.00217	0.055	Green	
270	53	0.0021	0.053		
	50	0.00197	0.500		Remove Visible Particles from Liquid
325	44	0.0017	0.044		Silt (10 - 75)
	40	0.00157	0.040	Purple	Lower Limit of Visibility (Naked Eye)
400	37	0.0015	0.037		Plant Pollen
(550)*	25	0.00099	0.025		White Blood Cells / Level to Achieve 'Optical Clarity' in a Liquid
(625)	20	0.00079	0.020	Gray	
(1200)	12	0.0005	0.012		
(1250)	10	0.000394	0.010		Talcum Powder / Level to Remove Haze from Liquid / Fertilizer (10 - 1,000 microns) / Mold Spores (10 - 30 microns)
	7	0.000276	0.007		Red Blood Cells (8 - 12 microns)
(2500)	5	0.000197	0.005		Bacteria (0.5 - 20 microns)
(4800)	3	0.000118	0.003		
(5000)	2.5	0.000099	0.0025		Cigarette Smoke & Bacteria (Cocci) = 2 microns
(12000)	1	0.0000394	0.001		Cryptosporidium (1 - 10 microns)

***** Mesh numbers in parentheses are too small to exist as actual screen sizes. They are only estimations and are included for reference.

What does mesh size mean? Determining mesh is very simple. Simply count how many openings there are in one inch of screen. The number of openings is the mesh size. An 80-mesh screen means there are 80 openings across one linear inch of screen. A 140-mesh screen has 140 openings, and so on. Therefore, as the mesh number increases, the size of the openings decreases. Note - Mesh size is not a precise measurement of particle size because of the size of the wire used in the screen. Beyond 400 mesh, particle size is normally defined only in "microns." That is because the finer the weave, the closer the wires get together; eventually there is no space between them.

What do the minus (-) and plus (+) plus signs mean when describing mesh sizes and particle distribution tests? To characterize particle size by mesh designation:

- A "+" before the mesh indicates the particles are retained by the sieve,
- A "-" before the mesh indicates the particles pass through the sieve, and
- Typically, 90%+ of the particles will lie within the indicated range.

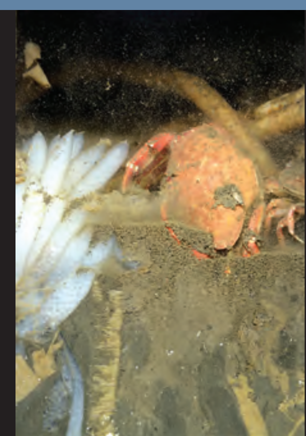
For example, if the particle size of a material is described as -10 / +30 mesh, then 90% or more of the material will pass through a 10-mesh sieve (particles smaller than 2.0 mm) but will be retained by a 30-mesh sieve (particles larger than 0.595 mm). If the material is described as -30 mesh, then 90% or more of the material will pass through a 30-mesh sieve (particles smaller than 0.595 mm).

APPENDIX C SEDIMENT PROFILE IMAGING REPORTS

March 2013

Sediment Profile Imaging Report

Demonstration of *in-situ* Treatment of Contaminated Sediments with Reactive Amendments: Baseline Survey



Prepared for

Environ International Corporation
333 West Wacker Drive
Suite 2700
Chicago, IL 60606-1220

Client Contract Number 2129692A

Prepared by

Germano & Associates, Inc.
12100 SE 46th Place
Bellevue, WA 98006

Sediment Profile Imaging Report

DEMONSTRATION OF *IN-SITU* TREATMENT OF CONTAMINATED SEDIMENTS WITH REACTIVE AMENDMENTS: BASELINE SURVEY

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March, 2013

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1.0
INTRODUCTION

As part of a multidisciplinary effort to investigate the feasibility of treating contaminated sediments in active Department of Defense (DoD) harbors, Germano & Associates, Inc. (G&A) performed a Sediment Profile Imaging (SPI) survey around Pier 7 at the Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF), Bremerton site. The purpose of the SPI survey was to document baseline conditions at a total of 42 stations before the reactive amendment was placed on the sediment surface.

2.0 MATERIALS AND METHODS

Between August 16-17, 2012, scientists from G&A collected a series of sediment profile images at a total of 42 stations (Figure 1). Two different versions of an Ocean Imaging Systems Model 3731 sediment profile camera were used for this survey; a standard SPI system using a surrounding frame that was deployed from a vessel (Figure 2), and a hand-held aluminum SPI system (Figure 3) deployed by PSNS & IMF divers for stations that were located under the pier and inaccessible for sampling with a boat. Stations were arranged in an orthogonal grid of seven rows with six stations in each row, with spacing between stations of approximately 8 meters; half the stations (positions #1, 2, and 3 in each row) were sampled by divers using the hand-held SPI unit, while any remaining stations that were not under the pier (including all of row #7) were sampled from the vessel using the frame-deployed SPI system.

SPI was developed almost four decades ago as a rapid reconnaissance tool for characterizing physical, chemical, and biological seafloor processes and has been used in numerous seafloor surveys throughout North America, Asia, Europe, and Africa (Rhoads and Germano 1982, 1986, 1990; Revelas et al. 1987; Diaz and Schaffner, 1988; Valente et al. 1992; Germano et al. 2011). The sediment profile camera works like an inverted periscope. A Nikon D7000 16.2-megapixel SLR camera with two 8-gigabyte secure digital (SD) cards is mounted horizontally inside a watertight housing on top of a wedge-shaped prism. The prism has a Plexiglas® faceplate at the front with a mirror placed at a 45° angle at the back. The camera lens looks down at the mirror, which is reflecting the image from the faceplate. The prism has an internal strobe mounted inside at the back of the wedge to provide illumination for the image; this chamber is filled with distilled water, so the camera always has an optically clear path. This wedge assembly is mounted on a moveable carriage within a stainless steel frame. The frame is lowered to the seafloor on a winch wire, and the tension on the wire keeps the prism in its “up” position. When the frame comes to rest on the seafloor, the winch wire goes slack (see Figure 2) and the camera prism descends into the sediment at a slow, controlled rate by the dampening action of a hydraulic piston so as not to disturb the sediment-water interface. On the way down, it trips a trigger that activates a time-delay circuit of variable length (operator-selected) to allow the camera to penetrate the seafloor before any image is taken. The knife-sharp edge of the prism transects the sediment, and the prism penetrates the bottom. The strobe is discharged after an appropriate time delay to obtain a cross-sectional image of the upper 20 cm of the sediment column. The resulting images give the viewer the same perspective as looking through the side of an aquarium half-filled with sediment. After the first image is obtained at the first location, the camera is then raised up about 2 to 3 meters off the bottom to allow the strobe to recharge; a wiper blade mounted on the frame removes any mud adhering to the faceplate. The strobe recharges within 5 seconds, and the camera is ready to be lowered again for a replicate image.

Surveys can be accomplished rapidly by "pogo-sticking" the camera across an area of seafloor while recording positional fixes on the surface vessel.

The hand-held SPI system (Figure 3) works on the same design, except that there is no time delay once the watertight switch is activated by the diver after the prism is inserted into the sediment. There is no wiper blade on the hand-held system, so the diver needs to clean the faceplate of the camera prism manually with a scrub brush after each image is taken.

Two types of adjustments to the SPI system are typically made in the field: physical adjustments to the chassis stop collars on the frame-deployed system or adding/subtracting lead weights to the chassis to control penetration in harder or softer sediments, and electronic software adjustments to the Nikon D7000 to control camera settings. Camera settings (f-stop, shutter speed, ISO equivalents, digital file format, color balance, etc.) are selectable through a water-tight USB port on the camera housing and Nikon Control Pro® software. At the beginning of the survey, the time on both of the sediment profile cameras' internal data loggers was synchronized with the clock on the sampling vessel to local time. Details of the camera settings for each digital image are available in the associated parameters file embedded in the electronic image file; for this survey, the ISO-equivalent was set at 640. The additional camera settings used were as follows: shutter speed was 1/250, f8, white balance set to flash, color mode to Adobe RGB, sharpening to none, noise reduction off, and storage in compressed raw Nikon Electronic Format (NEF) files (approximately 20 MB each). Electronic files were converted to high-resolution jpeg (14-bit) format files (49278 x 3264 pixels) using Nikon Capture NX2® software (Version 2.3.5.).

Three replicate images were taken at each station at the vessel-deployed frame stations, while 2 replicate images were taken by the divers at each of the under-pier stations; each SPI replicate is identified by the time recorded on the digital image file in the camera and in the field log on the vessel. The SD card was immediately surrendered at the completion of the survey to Navy security for review before the images could be released for public distribution. The unique time stamp on the digital image was then cross-checked with the time stamp recorded in the written sample logs. After the images were cleared by PSNS & IMF for release, they were re-named with the appropriate station name based on the time stamp on each image.

Test exposures of the Kodak® Color Separation Guide (Publication No. Q-13) were made on deck at the beginning of the survey to verify that all internal electronic systems were working to design specifications and to provide a color standard against which final images could be checked for proper color balance. A spare camera and charged battery were carried in the field at all times to insure uninterrupted sample acquisition. After deployment of the camera at each station, the frame counter was checked to make sure that the requisite number of replicates had been taken. In addition, a prism penetration depth indicator on the camera frame was checked to verify that the optical prism had

actually penetrated the bottom to a sufficient depth. If images were missed (frame counter indicator or verification from digital download) or the penetration depth was insufficient (penetration indicator), chassis stops were adjusted and/or weights were added or removed, and additional replicate images were taken. Changes in prism weight amounts, the presence or absence of mud doors, and chassis stop positions were recorded for each replicate image.

Following completion of the field operations, the raw NEF image files were converted to high-resolution Joint Photographic Experts Group (jpeg) format files using the minimal amount of image file compression. Once converted to jpeg format, the intensity histogram (RGB channel) for each image was adjusted in Adobe Photoshop® to maximize contrast without distortion. The jpeg images were then imported to Sigmascan Pro® (Aspire Software International) for image calibration and analysis. Calibration information was determined by measuring 1-cm gradations from the Kodak® Color Separation Guide. This calibration information was applied to all SPI images analyzed. Linear and area measurements were recorded as number of pixels and converted to scientific units using the calibration information.

Measured parameters were recorded on a Microsoft® Excel© spreadsheet. G&A's senior scientist (Dr. J. Germano) subsequently checked all these data as an independent quality assurance/quality control review of the measurements before final interpretation was performed.

2.1 MEASURING, INTERPRETING, AND MAPPING SPI PARAMETERS

2.1.1 Prism Penetration Depth

The SPI prism penetration depth was measured from the bottom of the image to the sediment-water interface. The area of the entire cross-sectional sedimentary portion of the image was digitized, and this number was divided by the calibrated linear width of the image to determine the average penetration depth.

Prism penetration is a noteworthy parameter; if the number of weights used in the camera is held constant throughout a survey, the camera functions as a static-load penetrometer. Comparative penetration values from sites of similar grain size give an indication of the relative water content of the sediment. Highly bioturbated sediments and rapidly accumulating sediments tend to have the highest water contents and greatest prism penetration depths.

The depth of penetration also reflects the bearing capacity and shear strength of the sediments. Overconsolidated or relic sediments and shell-bearing sands resist camera penetration. Highly bioturbated, sulfitic, or methanogenic muds are the least

consolidated, and deep penetration is typical. Seasonal changes in camera prism penetration have been observed at the same station in other studies and are related to the control of sediment geotechnical properties by bioturbation (Rhoads and Boyer 1982). The effect of water temperature on bioturbation rates appears to be important in controlling both biogenic surface relief and prism penetration depth (Rhoads and Germano 1982).

2.1.2 Thickness of Depositional Layers

Because of the camera's unique design, SPI can be used to detect the thickness of depositional and dredged material layers. SPI is effective in measuring layers ranging in thickness from 1 mm to 20 cm (the height of the SPI optical window). During image analysis, the thickness of the newly deposited sedimentary layers can be determined by measuring the distance between the pre- and post-disposal sediment-water interface. Recently deposited material is usually evident because of its unique optical reflectance and/or color relative to the underlying material representing the pre-disposal surface. Also, in most cases, the point of contact between the two layers is clearly visible as a textural change in sediment composition, facilitating measurement of the thickness of the newly deposited layer.

Because this was the baseline survey, there were no measurements recorded for the thickness of the reactive amendment; this parameter will be measured in future surveys at this site.

2.1.3 Apparent Redox Potential Discontinuity Depth

Aerobic near-surface marine sediments typically have higher reflectance relative to underlying hypoxic or anoxic sediments. Surface sands washed free of mud also have higher optical reflectance than underlying muddy sands. These differences in optical reflectance are readily apparent in SPI images; the oxidized surface sediment contains particles coated with ferric hydroxide (an olive or tan color when associated with particles), while reduced and muddy sediments below this oxygenated layer are darker, generally gray to black (Fenchel 1969; Lyle 1983). The boundary between the colored ferric hydroxide surface sediment and underlying gray to black sediment is called the apparent redox potential discontinuity (aRPD).

The depth of the aRPD in the sediment column is an important time-integrator of dissolved oxygen conditions within sediment porewaters. In the absence of bioturbating organisms, this high reflectance layer (in muds) will typically reach a thickness of 2 mm below the sediment-water interface (Rhoads 1974). This depth is related to the supply rate of molecular oxygen by diffusion into the bottom and the consumption of that oxygen by the sediment and associated microflora. In sediments that have very high sediment oxygen demand (SOD), the sediment may lack a high reflectance layer even when the overlying water column is aerobic.

In the presence of bioturbating macrofauna, the thickness of the high reflectance layer may be several centimeters. The relationship between the thickness of this high reflectance layer and the presence or absence of free molecular oxygen in the associated porewaters must be considered with caution. The actual RPD is the boundary or horizon that separates the positive reduction potential (Eh) region of the sediment column from the underlying negative Eh region. The exact location of this Eh = 0 boundary can be determined accurately only with microelectrodes; hence, the relationship between the change in optical reflectance, as imaged with the SPI camera, and the actual RPD can be determined only by making the appropriate *in situ* Eh measurements. For this reason, the optical reflectance boundary, as imaged, was described in this study as the "apparent" RPD and it was mapped as a mean value. In general, the depth of the actual Eh = 0 horizon will be either equal to or slightly shallower than the depth of the optical reflectance boundary (Rosenberg et al., 2001). This is because bioturbating organisms can mix ferric hydroxide-coated particles downward into the bottom below the Eh = 0 horizon. As a result, the mean aRPD depth can be used as an estimate of the depth of porewater exchange, usually through porewater irrigation (bioturbation). Biogenic particle mixing depths can be estimated by measuring the maximum and minimum depths of imaged feeding voids in the sediment column. This parameter represents the particle mixing depths of head-down feeders, mainly polychaetes.

The rate of depression of the aRPD within the sediment is relatively slow in organic-rich muds, on the order of 200 to 300 micrometers per day; therefore this parameter has a long time constant (Germano and Rhoads 1984). The rebound in the aRPD is also slow (Germano 1983). Measurable changes in the aRPD depth using the SPI optical technique can be detected over periods of 1 or 2 months. This parameter is used effectively to document changes (or gradients) that develop over a seasonal or yearly cycle related to water temperature effects on bioturbation rates, seasonal hypoxia, SOD, and infaunal recruitment. Time-series RPD measurements following a disturbance can be a critical diagnostic element in monitoring the degree of recolonization in an area by the ambient benthos (Rhoads and Germano 1986).

The mean aRPD depth also can be affected by local erosion. The peaks of disposal mounds commonly are scoured by divergent flow over the mound. This scouring can wash away fines and shell or gravel lag deposits, and can result in very thin surface oxidized layer. During storm periods, erosion may completely remove any evidence of the aRPD (Fredette et al. 1988).

Another important characteristic of the aRPD is the contrast in reflectance at this boundary. This contrast is related to the interactions among the degree of organic loading, the bioturbation activity in the sediment, and the concentrations of bottom-water dissolved oxygen in an area. High inputs of labile organic material increase SOD and, subsequently, sulfate reduction rates and the associated abundance of sulfide end products. This results in more highly reduced, lower-reflectance sediments at depth and

higher aRPD contrasts. In a region of generally low aRPD contrasts, images with high aRPD contrasts indicate localized sites of relatively large inputs of organic-rich material such as phytoplankton, other naturally-occurring organic detritus, dredged material, or sewage sludge.

Because the determination of the aRPD requires discrimination of optical contrast between oxidized and reduced particles, it is difficult, if not impossible, to determine the depth of the aRPD in well-sorted sands of any size that have little to no silt or organic matter in them (Painter et al, 2007). When using SPI technology on sand bottoms, little information other than grain-size, prism penetration depth, and boundary roughness values can be measured; while oxygen has no doubt penetrated the sand beneath the sediment-water interface just due to physical forcing factors acting on surface roughness elements (Ziebis et al., 1996; Huettel et al., 1998), estimates of the mean aRPD depths in these types of sediments are indeterminate with conventional white light photography.

2.1.4 Infaunal Successional Stage

The mapping of infaunal successional stages is readily accomplished with SPI technology. These stages are recognized in SPI images by the presence of dense assemblages of near-surface polychaetes and/or the presence of subsurface feeding voids; both may be present in the same image. Mapping of successional stages is based on the theory that organism-sediment interactions in fine-grained sediments follow a predictable sequence after a major seafloor perturbation. This theory states that primary succession results in “the predictable appearance of macrobenthic invertebrates belonging to specific functional types following a benthic disturbance. These invertebrates interact with sediment in specific ways. Because functional types are the biological units of interest..., our definition does not demand a sequential appearance of particular invertebrate species or genera” (Rhoads and Boyer 1982). This theory is presented in Pearson and Rosenberg (1978) and further developed in Rhoads and Germano (1982) and Rhoads and Boyer (1982).

This continuum of change in animal communities after a disturbance (primary succession) has been divided subjectively into four stages: Stage 0, indicative of a sediment column that is largely devoid of macrofauna, occurs immediately following a physical disturbance or in close proximity to an organic enrichment source; Stage 1 is the initial community of tiny, densely populated polychaete assemblages; Stage 2 is the start of the transition to head-down deposit feeders; and Stage 3 is the mature, equilibrium community of deep-dwelling, head-down deposit feeders (Figure 4).

After an area of bottom is disturbed by natural or anthropogenic events, the first invertebrate assemblage (Stage 1) appears within days after the disturbance. Stage 1 consists of assemblages of tiny tube-dwelling marine polychaetes that reach population densities of 10^4 to 10^6 individuals per m^2. These animals feed at or near the sediment-water interface and physically stabilize or bind the sediment surface by producing a

mucous “glue” that they use to build their tubes. Sometimes deposited dredged material layers contain Stage 1 tubes still attached to mud clasts from their location of origin; these transported individuals are considered as part of the *in situ* fauna in our assignment of successional stages.

If there are no repeated disturbances to the newly colonized area, then these initial tube-dwelling suspension or surface-deposit feeding taxa are followed by burrowing, head-down deposit-feeders that rework the sediment deeper and deeper over time and mix oxygen from the overlying water into the sediment. The animals in these later-appearing communities (Stage 2 or 3) are larger, have lower overall population densities (10 to 100 individuals per m^2), and can rework the sediments to depths of 3 to 20 cm or more. These animals “loosen” the sedimentary fabric, increase the water content in the sediment, thereby lowering the sediment shear strength, and actively recycle nutrients because of the high exchange rate with the overlying waters resulting from their burrowing and feeding activities.

In dynamic estuarine and coastal environments, it is simplistic to assume that benthic communities always progress completely and sequentially through all four stages in accordance with the idealized conceptual model depicted in Figure 3. Various combinations of these basic successional stages are possible. For example, secondary succession can occur (Horn, 1974) in response to additional labile carbon input to surface sediments, with surface-dwelling Stage 1 or 2 organisms co-existing at the same time and place with Stage 3, resulting in the assignment of a “Stage 1 on 3” or “Stage 2 on 3” designation.

While the successional dynamics of invertebrate communities in fine-grained sediments have been well-documented, the successional dynamics of invertebrate communities in sand and coarser sediments are not well-known. Subsequently, the insights gained from sediment profile imaging technology regarding biological community structure and dynamics in sandy and coarse-grained bottoms are fairly limited.

2.1.5 Biological Mixing Depth

During the past two decades, there has been a considerable emphasis on studying the effects of bioturbation on sediment geotechnical properties as well as sediment diagenesis (Ekman et al., 1981; Nowell et al., 1981; Rhoads and Boyer, 1982; Grant et al., 1982; Boudreau, 1986; 1994; 1998). However, an increasing focus of research is centering on the rates of contaminant flux in sediments (Reible and Thibodeaux, 1999; François et al., 2002; Gilbert et al., 2003), and the two parameters that affect the time rate of contaminant flux the greatest are erosion and bioturbation (Reible and Thibodeaux, 1999). The depth to which sediments are bioturbated, or the biological mixing depth, can be an important parameter for studying either nutrient or contaminant flux in sediments. While the apparent RPD is one potential measure of biological mixing depth, it is quite common in

profile images to see evidence of biological activity (burrows, voids, or actual animals) well below the mean apparent RPD. Both the minimum and maximum linear distance from the sediment surface to both the shallowest and deepest feature of biological activity can be measured along with a notation of the type of biogenic structure measured. For this report, the maximum depth to which any biological activity was noted was measured and mapped.

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3.0
RESULTS

While replicate images were taken at each station, the amount of disturbance caused by the diver-deployed system did not allow for reliable measurements of precision between the two replicate images, so only one replicate (the least disturbed) from each station sampled by divers was analyzed. The amount of debris in and around the piers coupled with the high density of shell fragments also created high variation in the penetration depth at the frame deployed stations, with cross-sectional sedimentary structures masked or destroyed by debris (natural or anthropogenic) being dragged down by the prism cutting blade. While a copy of all images collected was provided to the client, given the variation in image feature preservation (regardless of whether they were taken with the frame-deployed or diver-deployed system), and because this variation in cross-sectional structural appearance was not really indicative of natural variance in the measured parameters, the best image (least disturbed) from each station was analyzed. A complete set of all the summary data measured from each image is presented in Appendix A.

The results for some SPI parameters are sometimes indicated in the data appendix or on the maps as being “Indeterminate” (Ind). This is a result of the sediments being either: 1) too compact for the profile camera to penetrate adequately, preventing observation of surface or subsurface sediment features, 2) too soft to bear the weight of the camera, resulting in over-penetration to the point where the sediment/water interface was above the window (imaging area) on the camera prism (the sediment/water interface must be visible to measure most of the key SPI parameters like aRPD depth, penetration depth, and infaunal successional stage), or 3) the biogenic and sedimentary stratigraphic structure was compromised or destroyed by sampling artifacts caused by the divers inserting the prism into the sediment (either vibrating or wiggling the camera to achieve greater penetration, which allowed suspended sediment to collect in between the cross-sectional profile and the faceplate of the prism).

SPI has been shown to be a powerful reconnaissance tool that can efficiently map gradients in sediment type, biological communities, or disturbances from physical forces or organic enrichment. The results and conclusions in this report are about dynamic processes that have been deduced from imaged structures; as such, they should be considered hypotheses available for further testing/confirmation. By employing Occam’s Razor, we feel reasonably assured that the most parsimonious explanation is usually the one borne out by subsequent data confirmation.

3.1 PRISM PENETRATION DEPTH

Sediments throughout the site ranged from silt-clays with minor fractions of very fine to fine sand in the rows that ran under the pier, to silty sands as one progressed beyond the pier into Transect #7 (Figure 5). The mean prism penetration depth in the study area ranged from 7.3 to 21.2 cm, with an overall site average of 14.8 cm; the spatial distribution of mean penetration depth at all stations sampled is shown in Figure 6.

3.2 APPARENT REDOX POTENTIAL DISCONTINUITY DEPTH

The distribution of mean apparent RPD depths is shown in Figure 7; mean aRPD depths could not be measured at 12 of the stations sampled by divers because of sampling artifacts that caused distortions to the sediment profile and eliminated the possibility of any accurate measurements. While two of the stations had such high sediment-oxygen demand that no detectable aRPD was present (Stations 2-4 and 3-3; see Figure 8), the remaining stations had values ranging from 0.5 to 4.2 cm, with an overall site average of 1.8 cm.

3.3 INFAUNAL SUCCESSIONAL STAGE

The mapped distribution of infaunal successional stages is shown in Figure 9; while many of the stations had a surface armoring of shell-hash along with shell fragments mixed throughout the sediment column, presence of Stage 3 taxa (infaunal deposit feeders) was evident at 26 of the 42 stations. All of the stations outboard of the pier, e.g. 1-4, 2-4, 3-4, 4-4, etc., had dense assemblages of tubes from large sabellid polychaetes (Figure 10) that had evidently colonized the area from being removed from the bottom of ship hulls and established themselves in the sediments in the berthing areas; no sabellids were found in any of the images taken underneath the pier.

3.4 MAXIMUM BIOLOGICAL MIXING DEPTH

The spatial distribution of the maximum depth to which any biological activity was seen in the study area is shown in Figure 11. Evidence of infaunal burrowing was seen even in some of the images where the cross-sectional features of the profile were disturbed by diver sampling; maximum depth of biogenic activity ranged from 4.1 to 19.1 cm, with an overall site average of 12.7 cm for the maximum biological mixing depth.

4.0 DISCUSSION

The results from the SPI technology survey from the area around Pier 7 at the PSNS & IMF Bremerton site will serve as a good record of baseline conditions prior to the placement of the activated cap amendment. The most unusual finding from this baseline survey was the narrow band of the dense assemblage of sabellids alongside of the floating pontoon just to the west of the pier (concentrated in the location of station 4 in each of the transect rows); while these polychaetes were most likely brought to this area of bottom by originally being attached to ship's hulls, their distribution is rather localized and appears to be confined to the original footprint of their deposit from the hull and re-establishment on the sediment surface immediately under where the ships were docked.

While it was difficult to get accurate measurements of subsurface features from the images collected by divers (Figure 12) from locations under the pier , the widespread presence of infaunal deposit feeders throughout the site (Figure 9) should insure that adequate biogenic mixing of the amendment will occur after placement. It may prove difficult to accurately assess mixing of the amended cap material at the stations from under the pier that will be sampled by divers, but hopefully they will be able to improve their "prism insertion" techniques in future survey with more practice. We do not anticipate any issues with measuring the presence and depth to which the cap is mixed at those stations sampled from the boat with the support frame.

5.0
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FIGURES

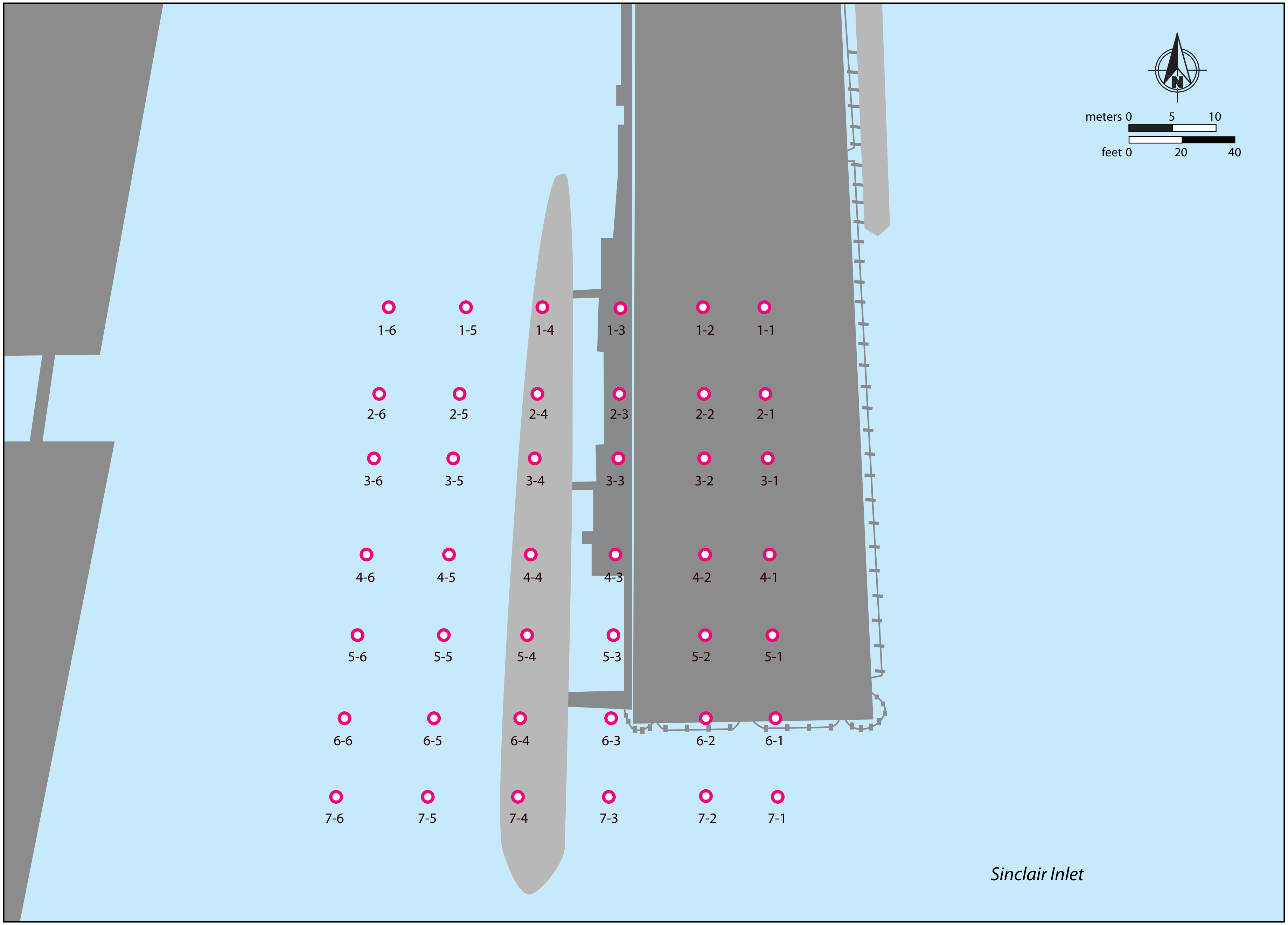


Figure 1: Location of SPI stations under and around Pier 7 at the Puget Sound Naval Shipyard & Intermediate Maintenance Facility, Bremerton, WA.

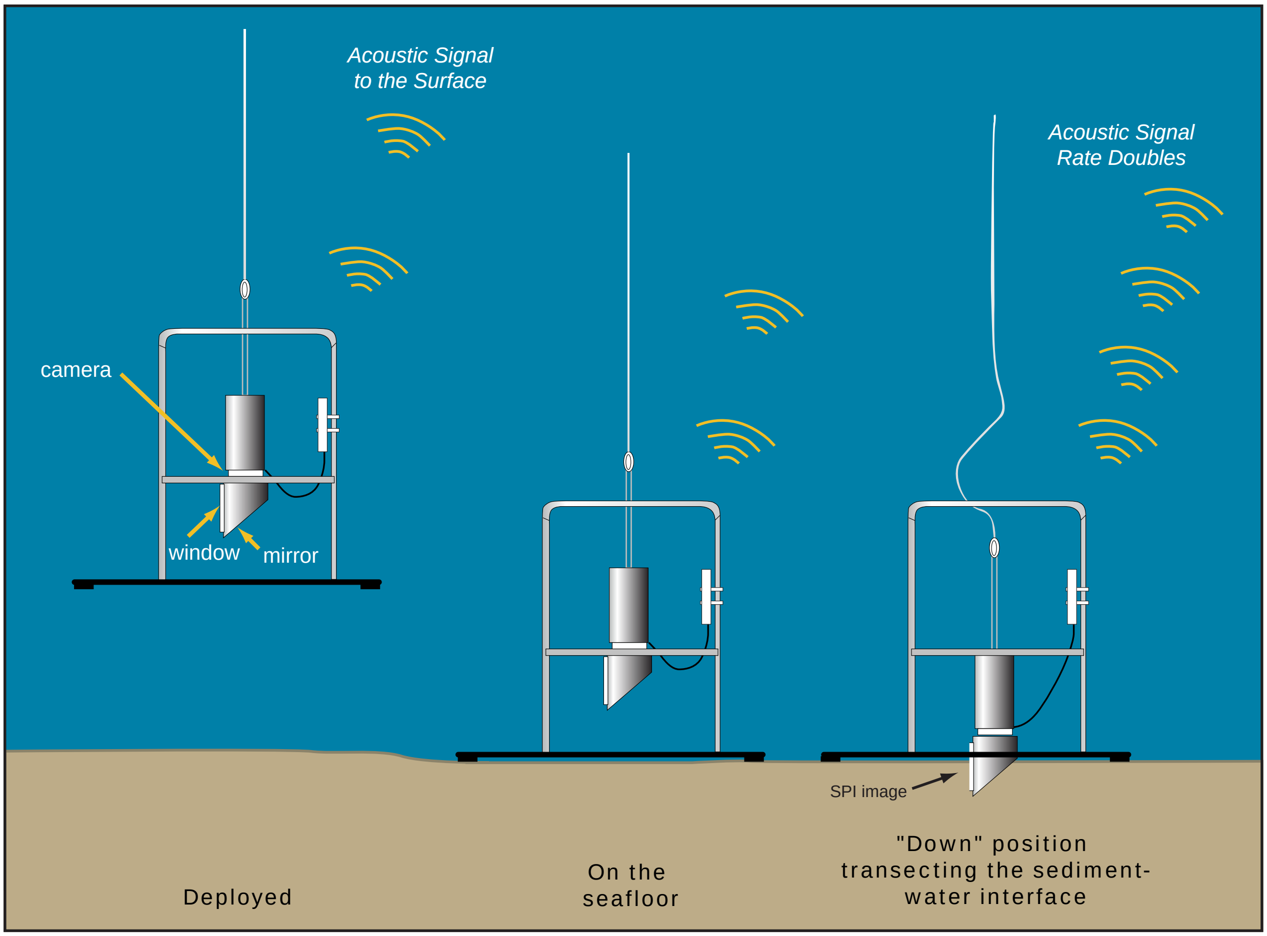


Figure 2: Deployment and operation of the SPI camera system. The central cradle of the camera is held in the “up” position by tension on the winch wire as it is being lowered to the seafloor (left); once the frame base hits the bottom (center), the prism is then free to penetrate the bottom (right) and take the photograph.

Figure 3: The hand-held SPI system used by divers for all stations that were located underneath Pier 7 at PSNS & IMF Bremerton site.

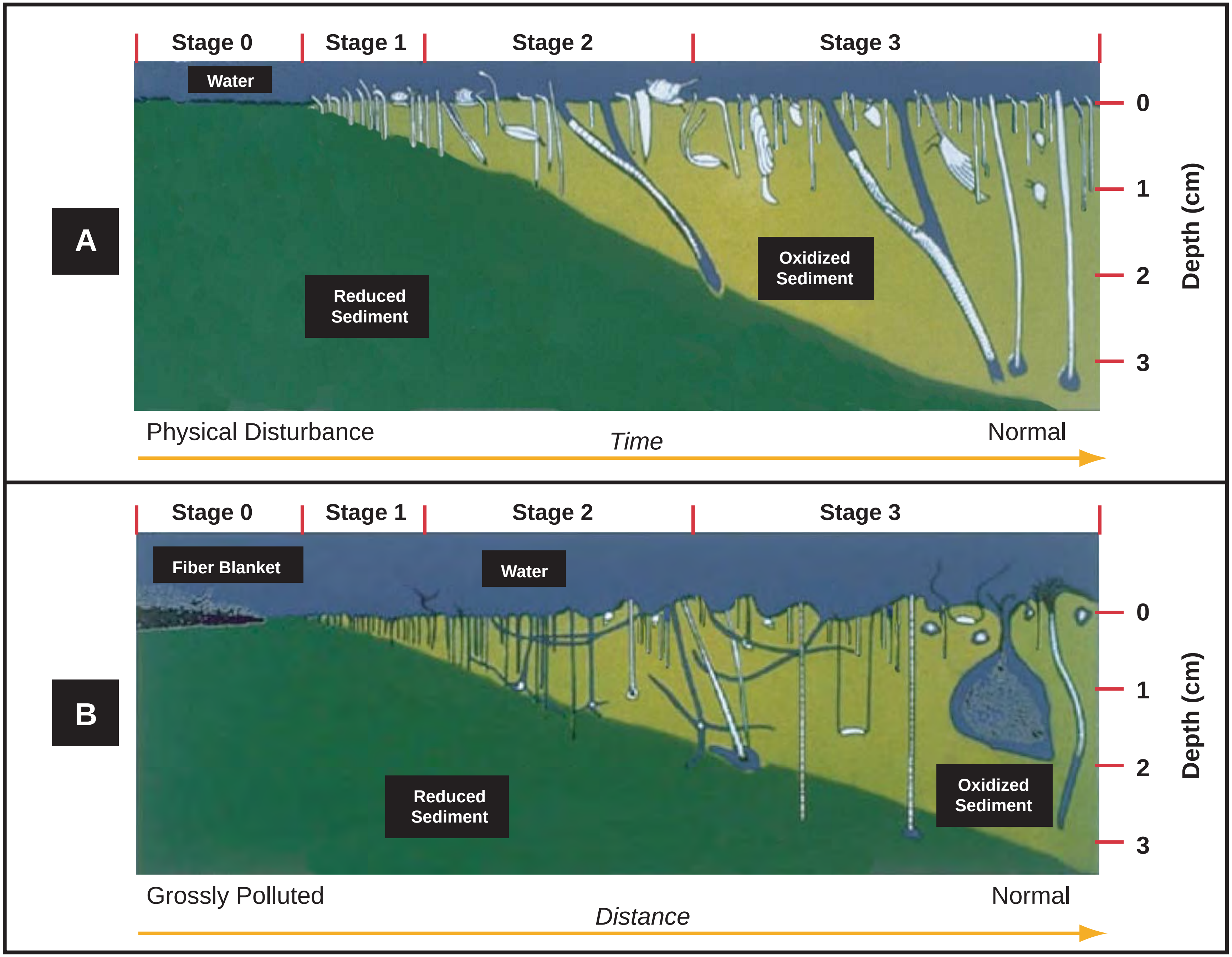
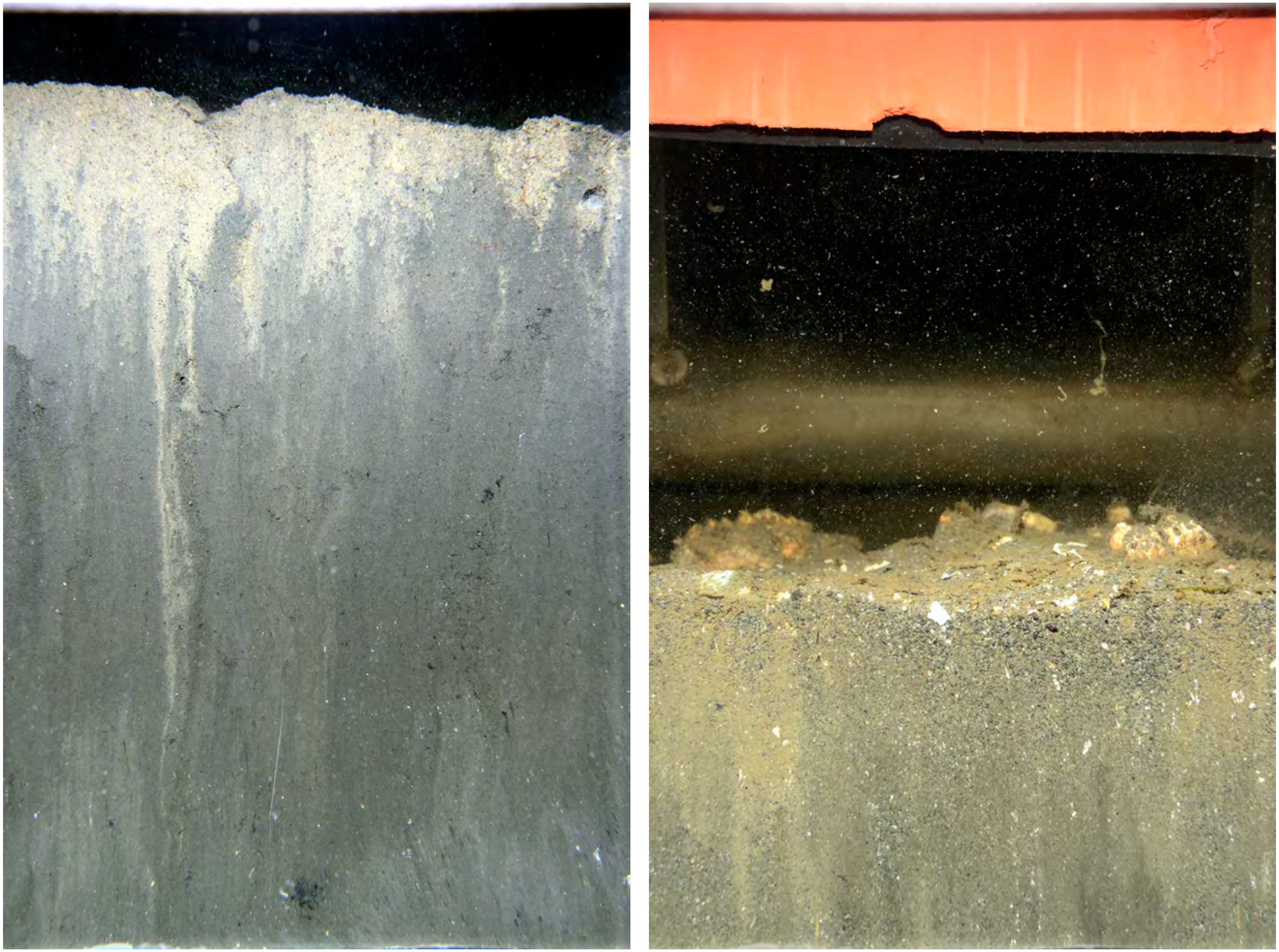


Figure 4: The stages of infaunal succession as a response of soft-bottom benthic communities to physical disturbance (top panel) or organic enrichment (bottom panel). From Rhoads and Germano, 1982.



1-5 7-3

Figure 5: Camera prism penetration was notably deeper in the finer-grained stations such as at Station 1-5 (left) as compared with stations at the southern end of the grid that had a higher sand fraction as seen in this profile image from Station 7-3 (right). Scale: width of each image = 14.5 cm. Note: Orange band on top of right image is from the rubber faceplate wiper on the SPI system.

Figure 6: Spatial distribution of mean prism penetration depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in August, 2012.

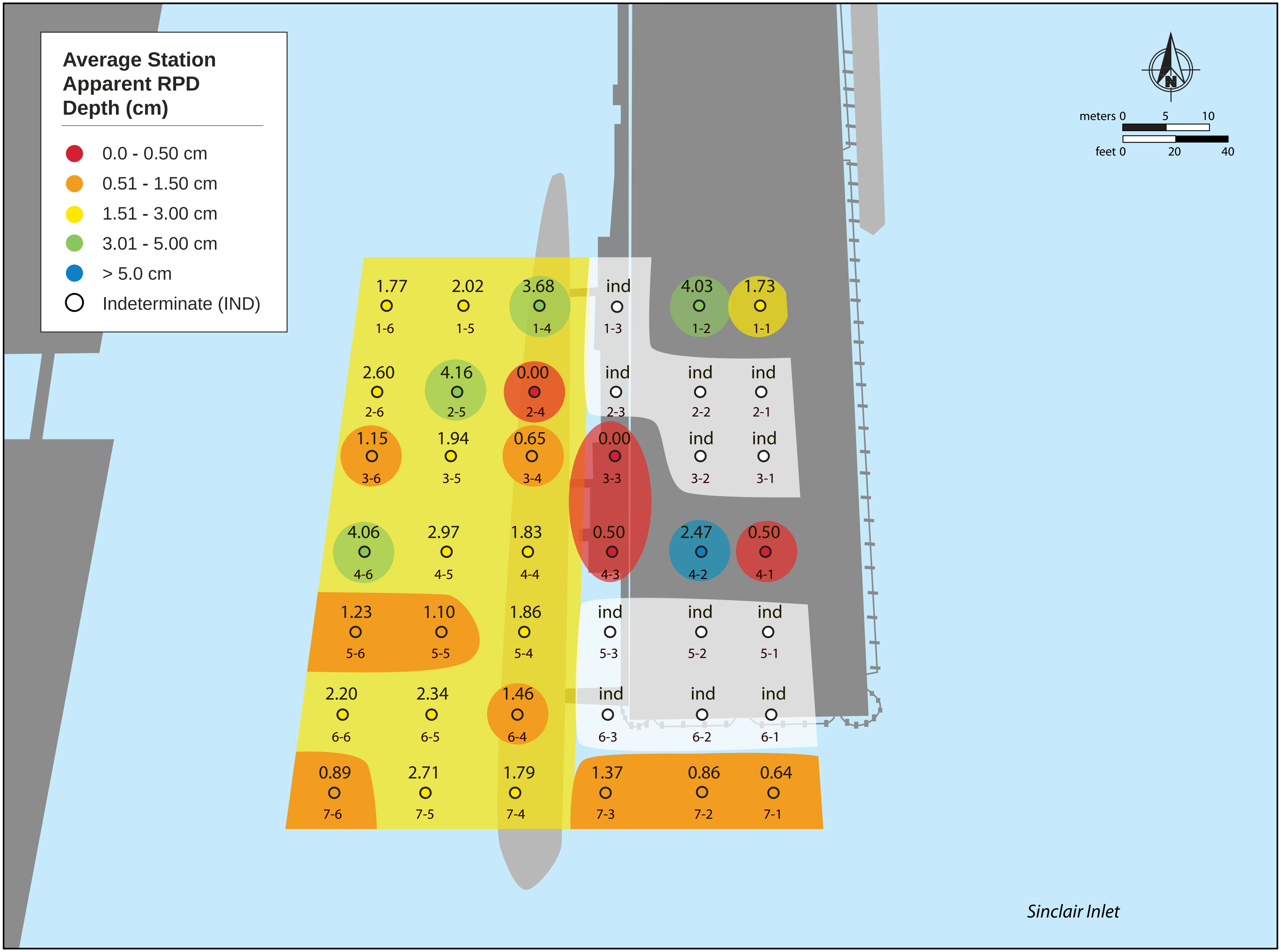


Figure 7: Spatial distribution of apparent RPD depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in August, 2012.

Figure 8: This profile image from Station 2-4 shows sabellid polychaete tubes projecting above a high-organic content sediment with no detectable surface oxidized layer. Scale: width of profile image = 14.5 cm.

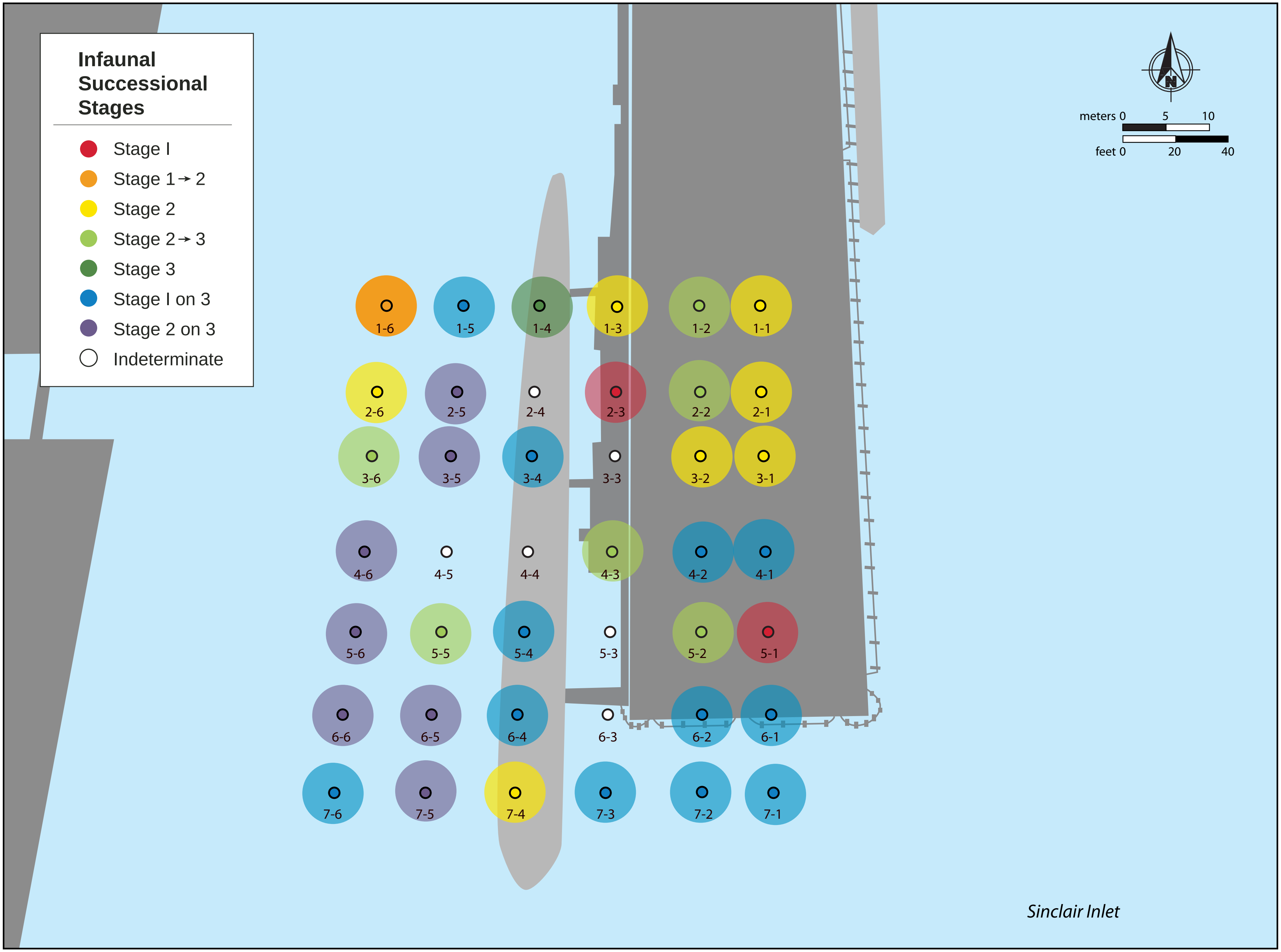


Figure 9: Spatial distribution of infaunal successional stage at the locations sampled around Pier 7 at the PSNS & IMF Bremerton site in August, 2012.

Figure 10: This profile image from Station 4-4 is an excellent example of the size and density of the tubes from sabellid polychaetes that were quite common at locations to the west of the pier. Squid eggs (white casings) and graceful crabs are also clearly visible. Scale: width of profile image = 14.5 cm.

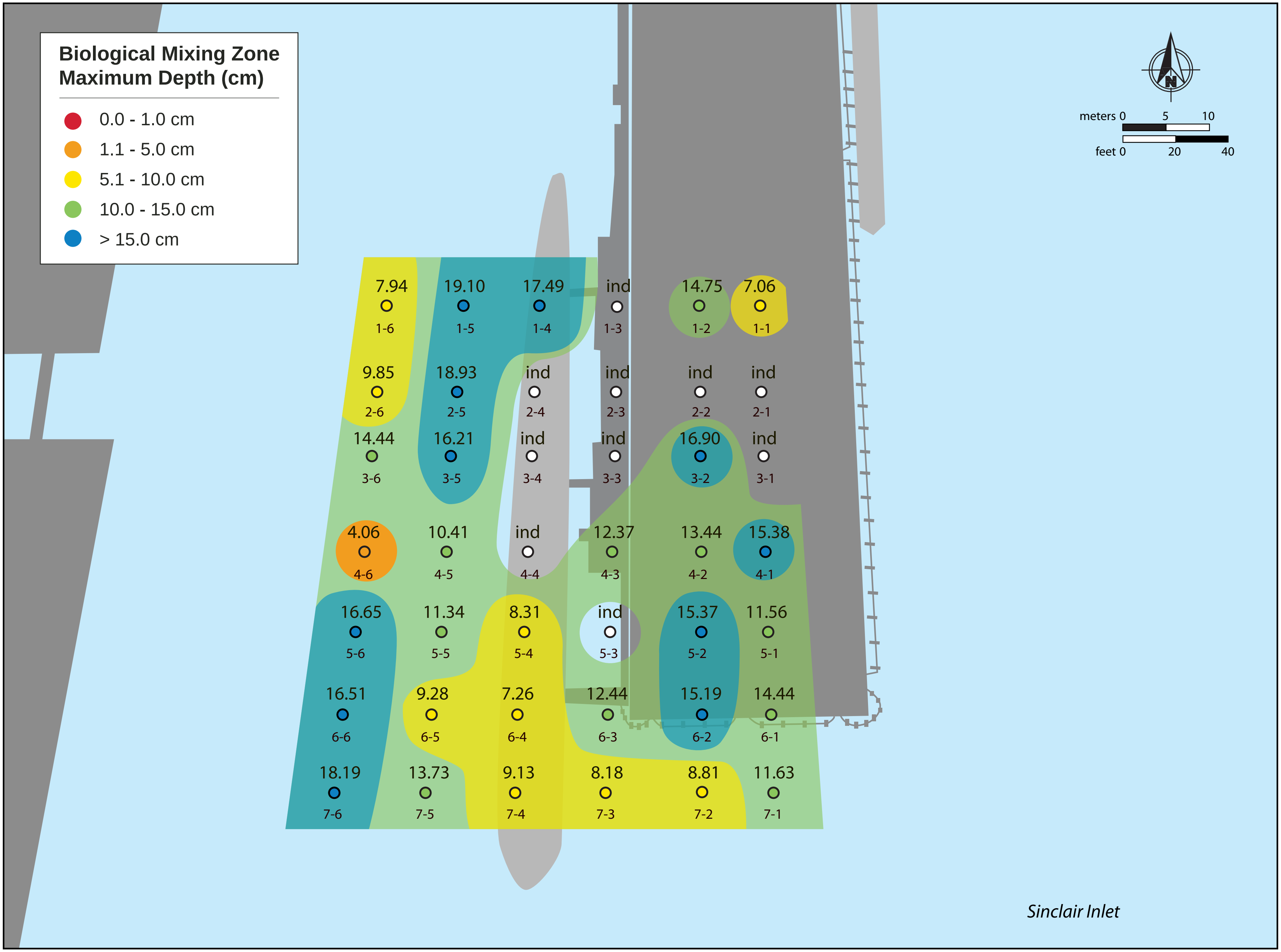


Figure 11: Spatial distribution of maximum biological mixing depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in August, 2012.

Figure 12: This profile image from Station 1-3 is typical of many of the images collected by divers and shows the lack of preservation of any subsurface features due to the prism being wiggled to insert it in the sediment. Scale: width of image = 14.5 cm.

APPENDIX A

Sediment Profile Image Analysis Results

STATION	REP	DATE	TIME	Calibration Constant	Penetration Area (sq.cm)	Average Penetration (cm)	RPD Area (sq.cm)	Mean RPD (cm)	Bio Mixing Zone Max Depth (cm)	Successional Stage	COMMENT
PSNS-1-1	A	8/16/2012	9:27:58	14.455	278.29	19.25	25.04	1.73	7.06	Stage 2	Sandy silt, with lots of shell fragments incorporated in upper cms; broken shells (various, some mussel) on surface; evidence of shallow burrows
PSNS-1-2	A2	8/16/2012	9:33:56	14.455	290.77	20.12	58.27	4.03	14.75	Stage 2 -> 3	Sandy silt with some shell fragments incorporated in upper oxy cms; top of SWI not visible on left; smear and dragdown to right; few mussel shell halves against faceplate; area of settled fine pellets at surface on right; v. small burrows in oxy sed to right to depth
PSNS-1-3	A	8/16/2012	9:45:41	14.455	152.69	10.56	Ind	ind	ind	Stage 2	Sandy silt, aRPD indeterminate because of surface disturbance by divers; large shells on surface, also mussel shells; shell fragments incorporated throughout image. Shallow burrowing with portions of infauna visible; aRPD most likely diffusional given high SOD of sediment.
PSNS-1-4	A	8/17/2012	8:01:24	14.425	252.26	17.49	53.05	3.68	17.49	Stage 3	Silt-clay with minor fraction of very fine sand; fecal pellet layer at surface, sabellid worms visible, evidence of reworking to full depth of image
PSNS-1-5	B	8/17/2012	9:28:13	14.425	280.27	19.43	29.21	2.02	19.10	Stage 1 on 3	Silt-clay; dense small tubes @ SWI, small burrows in aRPD and evidence of deeper burrowing throughout profile
PSNS-1-6	C	8/17/2012	12:27:12	14.425	214.24	14.85	25.53	1.77	7.94	Stage 1 -> 2	Silt-clay; distinct aRPD; fecal pellet surface layer & portions of small polychaetes visible in profile.
PSNS-2-1	B	8/16/2012	10:11:01	14.455	306.44	21.20	Ind	ind	ind	Stage 2	Overpenetration of silt-clay with high fraction of shell hash & fragments incorporated through most of sediment depth; few chunks of oxidized sed at ~1cm near surface; profile disturbed by divers and most of the visible subsurface structure is artifact of sampling.
PSNS-2-2	A2	8/16/2012	10:13:13	14.455	277.69	21.20	Ind	ind	ind	Stage 2 -> 3	Overpenetration of silt-clay with high fraction of shell hash & fragments incorporated through most of sediment depth; profile disturbed by divers and most of the visible subsurface structure is artifact of sampling. Evidence of burrowing at depth
PSNS-2-3	A2	8/16/2012	10:22:00	14.455	199.55	13.80	ind	ind	ind	Stage 1	Silt-clay with shell fragments incorporated through most of sediment depth; lots of larger shells on surface, mussels and others, some with barnacles on them, possible rocks in background; Beggiatoa filaments visible in sediment, high SOD.
PSNS-2-4	A	8/17/2012	8:11:57	14.425	210.25	14.57	0.00	0.00	ind	indeterminate	High SOD silt-clay with minor fraction of very fine sand, 2 sabellids from depth to surface, an additional tube on surface that is dead (gray in color); traces of Beggiatoa on tube surface, so low dissolved O2 in boundary layer.
PSNS-2-5	A	8/17/2012	9:42:49	14.425	273.06	18.93	59.98	4.16	18.93	Stage 2 on 3	Silt-clay with minor vfs fraction, distinct aRPD; bits of small polychaetes against faceplate at depth; sabellid tube above surface and through to depth on right
PSNS-2-6	A	8/17/2012	12:14:26	14.425	142.16	9.85	37.55	2.60	9.85	Stage 2	Silt-clay with minor vfs fraction; distinct aRPD; fecal pellets at surface and in upper cm; small burrows in aRPD
PSNS-3-1	B	8/16/2012	10:38:54	14.455	299.82	20.74	ind	ind	ind	Stage 2	Sandy silt with small shell fragments incorporated through depth; aRPD is not distinct and profile disturbed by sampling artifact.
PSNS-3-2	B	8/16/2012	10:42:17	14.455	260.11	17.99	ind	ind	16.90	Stage 2	Silty sediment; lots of shell frag, blanketing surface, incorporated heavily in upper 3-4 cm; aRPD is not distinct, most likely diffusional layer of oxidized surface particles dragged down over underlying profile by sampling artifact.
PSNS-3-3	B	8/16/2012	10:48:06	14.455	158.56	10.97	0.00	0.00	ind	indeterminate	Sandy silt with dense shell fragments throughout, particularly in the lower right; topped with fine layer of sed at surface; high SOD, Beggiatoa colonies present, profile disturbed by diver sampling artifact so biogenic mixing zone indeterminate.
PSNS-3-4	B	8/17/2012	8:26:15	14.425	201.12	13.94	9.31	0.65	ind	Stage 1 on 3	Sandy silt; large apparent burrow extending from surface to depth is artifact of surface bivalve shell being dragged down by camera prism and disturbing profile; somewhat patchy aRPD with small thin burrows.
PSNS-3-5	C	8/17/2012	10:07:20	14.425	234.10	16.23	27.95	1.94	16.21	Stage 2 on 3	Sandy silt with small burrows in upper cms of aRPD; void at depth
PSNS-3-6	A	8/17/2012	11:50:46	14.425	232.26	16.10	16.56	1.15	14.44	Stage 2 -> 3	Sandy silt with small burrows in oxidized layer and evidence of burrowing at depth.
PSNS-4-1	A	8/16/2012	11:42:48	14.455	267.59	18.51	7.28	0.50	15.38	Stage 1 on 3	Sandy silt with small shell fragments incorporated through entire profile; small gastropod on surface; aRPD is not distinct; few thin polychaetes visible in upper 7 cm, evidence of burrowing at depth as well as Beggiatoa filaments throughout profile.
PSNS-4-2	B	8/16/2012	11:50:48	14.455	230.56	15.95	35.66	2.47	13.44	Stage 1 on 3	Silty sediment, shell fragments incorporated in upper few cms with smaller shell bits to depth; larger shell fragments at surface, v. fine sed & fecal pellets at surface; polychaete visible on right at depth ~7cm. Beggiatoa filaments visible.
PSNS-4-3	A	8/16/2012	11:56:38	14.455	209.79	14.51	7.22	0.50	12.37	Stage 2 -> 3	Silty sediment, with some coarser grains and shell fragments incorporated; surface covered with cobble and shell; layers of shell frag/cobbles at 0.5cm; v fine sed in this layer on surface; two polychaetes visible below aRPD at ~2.5cm; relict aRPD, Beggiatoa filaments present
PSNS-4-4	B	8/17/2012	8:44:17	14.425	149.43	10.36	26.34	1.83	ind	indeterminate	Silt with oxidized pellet layer on surface; two crabs on surface; at least 3 sabellid worm tubes in sed, couple extend on surface; clusters of squid eggs that were dragged down to entire depth of image by prism (artifact).
PSNS-4-5	C	8/17/2012	10:18:07	14.425	171.56	11.89	42.89	2.97	10.41	indeterminate	Silt, with some coarse sediment; surface is uneven from crab being pushed below sediment by camera; most of profile cross sectional structure is sampling artifact.
PSNS-4-6	B	8/17/2012	11:36:28	14.425	176.01	12.20	58.56	4.06	4.06	Stage 2 on 3	Sandy silt, wide burrow connected to surface with some debris covered in sed at surface and filled with reworked sed, small burrows in upper cm.
PSNS-5-1	B	8/16/2012	12:10:27	14.455	210.39	14.55	Ind	ind	11.56	Stage 1	Sandy silt with high proportion of shell fragments incorporated throughout most of profile; surface layer of fecal pellets, aRPD appears diffusional with Beggiatoa colonies present at surface; however, evidence of burrowing at depth. Profile disturbed by divers.
PSNS-5-2	B	8/16/2012	12:14:03	14.455	267.48	18.50	Ind	ind	15.37	Stage 2 -> 3	Sandy silt with lots of shell fragments incorporated throughout sediment depth; few larger shell fragments at surface; no clear aRPD, profile disturbed by diver insertion of prism. Evidence of subsurface burrowing clearly visible at depth.
PSNS-5-3	A	8/16/2012	12:18:10	14.455	196.68	13.61	Ind	ind	ind	indeterminate	Sandy silt with high proportion of shell fragments; thick cloud of dark suspended sed obscuring much of SWI; profile disturbed by diver insertion, no cross-sectional original features preserved.
PSNS-5-4	B	8/17/2012	8:57:21	14.425	119.85	8.31	26.83	1.86	8.31	Stage 1 on 3	Silt-clay with minor sand fraction; clump of sabellid tubes on right, one extending across width of image, at least one is clearly empty; some coarse sand below reworked sed just below surface; small burrows in aRPD and evidence of burrowing at depth.
PSNS-5-5	A	8/17/2012	10:22:16	14.425	163.61	11.34	15.86	1.10	11.34	Stage 2 -> 3	Silty fine sand; distinct aRPD; polychaete visible near base of aRPD to left of center, evidence of burrowing at depth.
PSNS-5-6	A	8/17/2012	11:30:01	14.425	240.25	16.65	17.81	1.23	16.65	Stage 2 on 3	Silty fine sand with coarser grains near surface; several polychaetes against faceplate below aRPD and at depth.
PSNS-6-1	A	8/16/2012	12:45:24	14.455	208.80	14.44	ind	ind	14.44	Stage 1 on 3	Sandy silt with high proportion of shell fragments incorporated throughout sediment depth; surface covered with shell hash; polychaete visible against faceplate, evidence of burrowing to depth. Profile structure/aRPD distorted from diver insertion.
PSNS-6-2	B	8/16/2012	12:53:25	14.455	255.98	17.71	ind	ind	15.19	Stage 1 on 3	Sandy silt with great deal of shell fragments incorporated throughout the sediment depth, dense and larger fragments in upper few cms; surface covered with thick layer of shell hash. Layer of oxidized fecal pellets at surface, no distinct aRPD (structure obliterated by divers); polychaete at depth
PSNS-6-3	B	8/16/2012	12:57:38	14.455	196.55	13.60	ind	ind	12.44	indeterminate	Sandy silt with great deal of shell fragments incorporated throughout the sediment depth, dense and larger fragments in upper few cms; surface covered with thick layer of shell hash. Layer of oxidized fecal pellets at surface, no distinct aRPD (structure obliterated by divers).

STATION	REP	DATE	TIME	Calibration Constant	Penetration Area (sq.cm)	Average Penetration (cm)	RPD Area (sq.cm)	Mean RPD (cm)	Bio Mixing Zone Max Depth (cm)	Successional Stage	COMMENT
PSNS-6-4	B	8/17/2012	9:05:46	14.425	104.69	7.26	21.01	1.46	7.26	Stage 1 on 3	Silt-clay with minor fraction of fine sand; few sabellid tubes in sed and on surface, some thin burrows in upper cm
PSNS-6-5	A	8/17/2012	10:50:30	14.425	133.84	9.28	33.83	2.34	9.28	Stage 2 on 3	Silty fine sand with coarser grains near surface; some organic debris at surface; small burrows within aRPD; polychaete at depth.
PSNS-6-6	A	8/17/2012	11:17:19	14.425	247.06	17.13	31.75	2.20	16.51	Stage 2 on 3	Silty very fine sand, small and large polychaetes at depth; evidence of burrowing throughout profile
PSNS-7-1	A	8/16/2012	14:38:41	14.455	171.92	11.89	9.27	0.64	11.63	Stage 1 on 3	Silty very fine sand with coarser grains in upper cm; depression, few large shell fragments on surface and other organic debris, evidence of burrowing throughout profile.
PSNS-7-2	C	8/16/2012	14:26:58	14.455	140.16	9.70	12.49	0.86	8.81	Stage 1 on 3	Sandy silt; surface covered with shells (one open mussel, other barnacle covered shells); discontinuous aRPD, only on right side; fecal pellets at surface, evidence of burrowing at depth.
PSNS-7-3	B	8/16/2012	14:08:25	14.455	117.10	8.10	19.87	1.37	8.18	Stage 1 on 3	Silty fine sand, coarser at surface; surface covered with small organic debris and larger shells or rocks; two small polychaetes against faceplate at depth, evidence of burrowing throughout profile.
PSNS-7-4	C	8/17/2012	12:59:09	14.425	189.73	13.15	25.82	1.79	9.13	Stage 2	Silt; organic debris at surface; sabellid worm tube gragement on surface; 3 sabellid tubes dragged down by prism.
PSNS-7-5	C	8/17/2012	13:09:03	14.425	198.01	13.73	39.13	2.71	13.73	Stage 2 on 3	Silty fine sand; distinct aRPD; two polychates against faceplate at depth; small open end of large burrow below aRPD; evidence of burrowing to depth
PSNS-7-6	C	8/17/2012	13:26:38	14.425	293.57	20.35	12.86	0.89	18.19	Stage 1 on 3	Sandy silt; small polychaete against faceplate at depth, evidence of burrowing throughout profile

March 2013

Sediment Profile Imaging Report

Demonstration of *in-situ* Treatment of Contaminated Sediments with Reactive Amendments: Post-Cap Survey #1





Prepared for

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Suite 200
Seattle, WA 98109-3856

Hart Crowser Job Number 1789700,
Work Order #1

Prepared by

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1.0
INTRODUCTION

As part of a multidisciplinary effort to investigate the feasibility of treating contaminated sediments in active Department of Defense (DoD) harbors, Germano & Associates, Inc. (G&A) performed a Sediment Profile Imaging (SPI) survey at the Puget Sound Naval Shipyard in Bremerton, WA around Pier 7. The purpose of this SPI survey was to document conditions at a total of 42 stations following placement of a reactive amendment cap placed on the sediment surface.

2.0
MATERIALS AND METHODS

Between October 14-16, 2012, 141 tons of AquaGate +PAC™ were placed in the target area for remediation under and around Pier 7 at the Puget Sound Naval Shipyard in Bremerton, WA. Two weeks following cap placement on October 30-31, 2012, scientists from G&A collected a series of sediment profile images at a total of 42 stations (Figure 1). Two different versions of an Ocean Imaging Systems Model 3731 sediment profile camera were used for this survey; a standard SPI system using a surrounding frame that was deployed from a vessel (Figure 2), and a hand-held aluminum SPI system (Figure 3) deployed by Navy divers for stations that were located under the pier and inaccessible for sampling with a boat. Stations were arranged in an orthogonal grid of seven rows with six stations in each row, with spacing between stations of approximately 8 meters; half the stations (positions #1, 2, and 3 in each row) were sampled by divers using the hand-held SPI unit, while any remaining stations that were not under the pier (including all of row #7) were sampled from the vessel using the frame-deployed SPI system.

SPI was developed almost four decades ago as a rapid reconnaissance tool for characterizing physical, chemical, and biological seafloor processes and has been used in numerous seafloor surveys throughout North America, Asia, Europe, and Africa (Rhoads and Germano 1982, 1986, 1990; Revelas et al. 1987; Diaz and Schaffner, 1988; Valente et al. 1992; Germano et al. 2011). The sediment profile camera works like an inverted periscope. A Nikon D7000 16.2-megapixel SLR camera with two 8-gigabyte secure digital (SD) cards is mounted horizontally inside a watertight housing on top of a wedge-shaped prism. The prism has a Plexiglas® faceplate at the front with a mirror placed at a 45° angle at the back. The camera lens looks down at the mirror, which is reflecting the image from the faceplate. The prism has an internal strobe mounted inside at the back of the wedge to provide illumination for the image; this chamber is filled with distilled water, so the camera always has an optically clear path. This wedge assembly is mounted on a moveable carriage within a stainless steel frame. The frame is lowered to the seafloor on a winch wire, and the tension on the wire keeps the prism in its "up" position. When the frame comes to rest on the seafloor, the winch wire goes slack (see Figure 2) and the camera prism descends into the sediment at a slow, controlled rate by the dampening action of a hydraulic piston so as not to disturb the sediment-water interface. On the way down, it trips a trigger that activates a time-delay circuit of variable length (operator-selected) to allow the camera to penetrate the seafloor before any image is taken. The knife-sharp edge of the prism transects the sediment, and the prism penetrates the bottom. The strobe is discharged after an appropriate time delay to obtain a cross-sectional image of the upper 20 cm of the sediment column. The resulting images give the viewer the same perspective as looking through the side of an aquarium half-filled with sediment. After the first image is obtained at the first location, the camera is then

raised up about 2 to 3 meters off the bottom to allow the strobe to recharge; a wiper blade mounted on the frame removes any mud adhering to the faceplate. The strobe recharges within 5 seconds, and the camera is ready to be lowered again for a replicate image. Surveys can be accomplished rapidly by “pogo-sticking” the camera across an area of seafloor while recording positional fixes on the surface vessel.

The hand-held SPI system (Figure 3) works on the same design, except that there is no time delay once the watertight switch is activated by the diver after the prism is inserted into the sediment. There is no wiper blade on the hand-held system, so the diver needs to clean the faceplate of the camera prism manually with a scrub brush after each image is taken.

Two types of adjustments to the SPI system are typically made in the field: physical adjustments to the chassis stop collars on the frame-deployed system or adding/subtracting lead weights to the chassis to control penetration in harder or softer sediments, and electronic software adjustments to the Nikon D7000 to control camera settings. Camera settings (f-stop, shutter speed, ISO equivalents, digital file format, color balance, etc.) are selectable through a water-tight USB port on the camera housing and Nikon Control Pro® software. At the beginning of the survey, the time on both of the sediment profile cameras’ internal data loggers was synchronized with the clock on the sampling vessel to local time. Details of the camera settings for each digital image are available in the associated parameters file embedded in the electronic image file; for this survey, the ISO-equivalent was set at 640. The additional camera settings used were as follows: shutter speed was 1/250, f8, white balance set to flash, color mode to Adobe RGB, sharpening to none, noise reduction off, and storage in compressed raw Nikon Electronic Format (NEF) files (approximately 20 MB each). Electronic files were converted to high-resolution jpeg (14-bit) format files (49278 x 3264 pixels) using Nikon Capture NX2® software (Version 2.3.5.).

Three replicate images were taken at each station at the vessel-deployed frame stations, while 2 replicate images were taken by the divers at each of the under-pier stations; each SPI replicate is identified by the time recorded on the digital image file in the camera and in the field log on the vessel. The SD card was immediately surrendered at the completion of the survey to Navy security for review before the images could be released for public distribution. The unique time stamp on the digital image was then cross-checked with the time stamp recorded in the written sample logs. After the images were cleared by Bremerton security, they were re-named with the appropriate station name based on the time stamp on each image.

Test exposures of the Kodak® Color Separation Guide (Publication No. Q-13) were made on deck at the beginning of the survey to verify that all internal electronic systems were working to design specifications and to provide a color standard against which final images could be checked for proper color balance. A spare camera and charged battery were carried in the field at all times to insure uninterrupted sample acquisition. After

deployment of the camera at each station, the frame counter was checked to make sure that the requisite number of replicates had been taken. In addition, a prism penetration depth indicator on the camera frame was checked to verify that the optical prism had actually penetrated the bottom to a sufficient depth. If images were missed (frame counter indicator or verification from digital download) or the penetration depth was insufficient (penetration indicator), chassis stops were adjusted and/or weights were added or removed, and additional replicate images were taken. Changes in prism weight amounts, the presence or absence of mud doors, and chassis stop positions were recorded for each replicate image.

Following completion of the field operations, the raw NEF image files were converted to high-resolution Joint Photographic Experts Group (jpeg) format files using the minimal amount of image file compression. Once converted to jpeg format, the intensity histogram (RGB channel) for each image was adjusted in Adobe Photoshop® to maximize contrast without distortion. The jpeg images were then imported to Sigmascan Pro® (Aspire Software International) for image calibration and analysis. Calibration information was determined by measuring 1-cm gradations from the Kodak® Color Separation Guide. This calibration information was applied to all SPI images analyzed. Linear and area measurements were recorded as number of pixels and converted to scientific units using the calibration information.

Measured parameters were recorded on a Microsoft® Excel© spreadsheet. G&A's senior scientist (Dr. J. Germano) subsequently checked all these data as an independent quality assurance/quality control review of the measurements before final interpretation was performed.

2.1 MEASURING, INTERPRETING, AND MAPPING SPI PARAMETERS

2.1.1 Prism Penetration Depth

The SPI prism penetration depth was measured from the bottom of the image to the sediment-water interface. The area of the entire cross-sectional sedimentary portion of the image was digitized, and this number was divided by the calibrated linear width of the image to determine the average penetration depth.

Prism penetration is a noteworthy parameter; if the number of weights used in the camera is held constant throughout a survey, the camera functions as a static-load penetrometer. Comparative penetration values from sites of similar grain size give an indication of the relative water content of the sediment. Highly bioturbated sediments and rapidly accumulating sediments tend to have the highest water contents and greatest prism penetration depths.

The depth of penetration also reflects the bearing capacity and shear strength of the sediments. Overconsolidated or relic sediments and shell-bearing sands resist camera penetration. Highly bioturbated, sulfitic, or methanogenic muds are the least consolidated, and deep penetration is typical. Seasonal changes in camera prism penetration have been observed at the same station in other studies and are related to the control of sediment geotechnical properties by bioturbation (Rhoads and Boyer 1982). The effect of water temperature on bioturbation rates appears to be important in controlling both biogenic surface relief and prism penetration depth (Rhoads and Germano 1982).

2.1.2 Thickness of Depositional (GAC) Layers

Because of the camera's unique design, SPI can be used to detect the thickness of depositional and dredged material layers. SPI is effective in measuring layers ranging in thickness from 1 mm to 20 cm (the height of the SPI optical window). During image analysis, the thickness of the newly deposited sedimentary layers can be determined by measuring the distance between the pre- and post-disposal sediment-water interface. Recently deposited material is usually evident because of its unique optical reflectance and/or color relative to the underlying material representing the pre-disposal surface. Also, in most cases, the point of contact between the two layers is clearly visible as a textural change in sediment composition, facilitating measurement of the thickness of the newly deposited layer.

2.1.3 Apparent Redox Potential Discontinuity Depth

Aerobic near-surface marine sediments typically have higher reflectance relative to underlying hypoxic or anoxic sediments. Surface sands washed free of mud also have higher optical reflectance than underlying muddy sands. These differences in optical reflectance are readily apparent in SPI images; the oxidized surface sediment contains particles coated with ferric hydroxide (an olive or tan color when associated with particles), while reduced and muddy sediments below this oxygenated layer are darker, generally gray to black (Fenchel 1969; Lyle 1983). The boundary between the colored ferric hydroxide surface sediment and underlying gray to black sediment is called the apparent redox potential discontinuity (aRPD).

The depth of the aRPD in the sediment column is an important time-integrator of dissolved oxygen conditions within sediment porewaters. In the absence of bioturbating organisms, this high reflectance layer (in muds) will typically reach a thickness of 2 mm below the sediment-water interface (Rhoads 1974). This depth is related to the supply rate of molecular oxygen by diffusion into the bottom and the consumption of that oxygen by the sediment and associated microflora. In sediments that have very high sediment oxygen demand (SOD), the sediment may lack a high reflectance layer even when the overlying water column is aerobic.

In the presence of bioturbating macrofauna, the thickness of the high reflectance layer may be several centimeters. The relationship between the thickness of this high reflectance layer and the presence or absence of free molecular oxygen in the associated porewaters must be considered with caution. The actual RPD is the boundary or horizon that separates the positive Eh region of the sediment column from the underlying negative Eh region. The exact location of this Eh = 0 boundary can be determined accurately only with microelectrodes; hence, the relationship between the change in optical reflectance, as imaged with the SPI camera, and the actual RPD can be determined only by making the appropriate *in situ* Eh measurements. For this reason, the optical reflectance boundary, as imaged, was described in this study as the "apparent" RPD and it was mapped as a mean value. In general, the depth of the actual Eh = 0 horizon will be either equal to or slightly shallower than the depth of the optical reflectance boundary (Rosenberg et al., 2001). This is because bioturbating organisms can mix ferric hydroxide-coated particles downward into the bottom below the Eh = 0 horizon. As a result, the mean aRPD depth can be used as an estimate of the depth of porewater exchange, usually through porewater irrigation (bioturbation). Biogenic particle mixing depths can be estimated by measuring the maximum and minimum depths of imaged feeding voids in the sediment column. This parameter represents the particle mixing depths of head-down feeders, mainly polychaetes.

The rate of depression of the aRPD within the sediment is relatively slow in organic-rich muds, on the order of 200 to 300 micrometers per day; therefore this parameter has a long time constant (Germano and Rhoads 1984). The rebound in the aRPD is also slow (Germano 1983). Measurable changes in the aRPD depth using the SPI optical technique can be detected over periods of 1 or 2 months. This parameter is used effectively to document changes (or gradients) that develop over a seasonal or yearly cycle related to water temperature effects on bioturbation rates, seasonal hypoxia, SOD, and infaunal recruitment. Time-series RPD measurements following a disturbance can be a critical diagnostic element in monitoring the degree of recolonization in an area by the ambient benthos (Rhoads and Germano 1986).

The mean aRPD depth also can be affected by local erosion. The peaks of disposal mounds commonly are scoured by divergent flow over the mound. This scouring can wash away fines and shell or gravel lag deposits, and can result in very thin surface oxidized layer. During storm periods, erosion may completely remove any evidence of the aRPD (Fredette et al. 1988).

Another important characteristic of the aRPD is the contrast in reflectance at this boundary. This contrast is related to the interactions among the degree of organic loading, the bioturbation activity in the sediment, and the concentrations of bottom-water dissolved oxygen in an area. High inputs of labile organic material increase SOD and, subsequently, sulfate reduction rates and the associated abundance of sulfide end products. This results in more highly reduced, lower-reflectance sediments at depth and higher aRPD contrasts. In a region of generally low aRPD contrasts, images with high

aRPD contrasts indicate localized sites of relatively large inputs of organic-rich material such as phytoplankton, other naturally-occurring organic detritus, dredged material, or sewage sludge.

Because the determination of the aRPD requires discrimination of optical contrast between oxidized and reduced particles, it is difficult, if not impossible, to determine the depth of the aRPD in well-sorted sands of any size that have little to no silt or organic matter in them (Painter et al, 2007). When using SPI technology on sand bottoms, little information other than grain-size, prism penetration depth, and boundary roughness values can be measured; while oxygen has no doubt penetrated the sand beneath the sediment-water interface just due to physical forcing factors acting on surface roughness elements (Ziebis et al., 1996; Huettel et al., 1998), estimates of the mean aRPD depths in these types of sediments are indeterminate with conventional white light photography.

2.1.4 Infaunal Successional Stage

The mapping of infaunal successional stages is readily accomplished with SPI technology. These stages are recognized in SPI images by the presence of dense assemblages of near-surface polychaetes and/or the presence of subsurface feeding voids; both may be present in the same image. Mapping of successional stages is based on the theory that organism-sediment interactions in fine-grained sediments follow a predictable sequence after a major seafloor perturbation. This theory states that primary succession results in "the predictable appearance of macrobenthic invertebrates belonging to specific functional types following a benthic disturbance. These invertebrates interact with sediment in specific ways. Because functional types are the biological units of interest..., our definition does not demand a sequential appearance of particular invertebrate species or genera" (Rhoads and Boyer 1982). This theory is presented in Pearson and Rosenberg (1978) and further developed in Rhoads and Germano (1982) and Rhoads and Boyer (1982).

This continuum of change in animal communities after a disturbance (primary succession) has been divided subjectively into four stages: Stage 0, indicative of a sediment column that is largely devoid of macrofauna, occurs immediately following a physical disturbance or in close proximity to an organic enrichment source; Stage 1 is the initial community of tiny, densely populated polychaete assemblages; Stage 2 is the start of the transition to head-down deposit feeders; and Stage 3 is the mature, equilibrium community of deep-dwelling, head-down deposit feeders (Figure 4).

After an area of bottom is disturbed by natural or anthropogenic events, the first invertebrate assemblage (Stage 1) appears within days after the disturbance. Stage 1 consists of assemblages of tiny tube-dwelling marine polychaetes that reach population densities of 10^4 to 10^6 individuals per m². These animals feed at or near the sediment-water interface and physically stabilize or bind the sediment surface by producing a mucous "glue" that they use to build their tubes. Sometimes deposited dredged material

layers contain Stage 1 tubes still attached to mud clasts from their location of origin; these transported individuals are considered as part of the *in situ* fauna in our assignment of successional stages.

If there are no repeated disturbances to the newly colonized area, then these initial tube-dwelling suspension or surface-deposit feeding taxa are followed by burrowing, head-down deposit-feeders that rework the sediment deeper and deeper over time and mix oxygen from the overlying water into the sediment. The animals in these later-appearing communities (Stage 2 or 3) are larger, have lower overall population densities (10 to 100 individuals per m^2), and can rework the sediments to depths of 3 to 20 cm or more. These animals "loosen" the sedimentary fabric, increase the water content in the sediment, thereby lowering the sediment shear strength, and actively recycle nutrients because of the high exchange rate with the overlying waters resulting from their burrowing and feeding activities.

In dynamic estuarine and coastal environments, it is simplistic to assume that benthic communities always progress completely and sequentially through all four stages in accordance with the idealized conceptual model depicted in Figure 3. Various combinations of these basic successional stages are possible. For example, secondary succession can occur (Horn, 1974) in response to additional labile carbon input to surface sediments, with surface-dwelling Stage 1 or 2 organisms co-existing at the same time and place with Stage 3, resulting in the assignment of a "Stage 1 on 3" or "Stage 2 on 3" designation.

While the successional dynamics of invertebrate communities in fine-grained sediments have been well-documented, the successional dynamics of invertebrate communities in sand and coarser sediments are not well-known. Subsequently, the insights gained from sediment profile imaging technology regarding biological community structure and dynamics in sandy and coarse-grained bottoms are fairly limited.

2.1.5 Biological Mixing Depth

During the past two decades, there has been a considerable emphasis on studying the effects of bioturbation on sediment geotechnical properties as well as sediment diagenesis (Ekman et al., 1981; Nowell et al., 1981; Rhoads and Boyer, 1982; Grant et al., 1982; Boudreau, 1986; 1994; 1998). However, an increasing focus of research is centering on the rates of contaminant flux in sediments (Reible and Thibodeaux, 1999; François et al., 2002; Gilbert et al., 2003), and the two parameters that affect the time rate of contaminant flux the greatest are erosion and bioturbation (Reible and Thibodeaux, 1999). The depth to which sediments are bioturbated, or the biological mixing depth, can be an important parameter for studying either nutrient or contaminant flux in sediments. While the apparent RPD is one potential measure of biological mixing depth, it is quite common in profile images to see evidence of biological activity (burrows, voids, or actual animals)

well below the mean apparent RPD. Both the minimum and maximum linear distance from the sediment surface to both the shallowest and deepest feature of biological activity can be measured along with a notation of the type of biogenic structure measured. For this report, the maximum depth to which any biological activity was noted was measured and mapped.

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3.0
RESULTS

While replicate images were taken at each station, the amount of disturbance caused by the diver-deployed system did not allow for reliable measurements of precision between the two replicate images, so only one replicate (the least disturbed) from each station sampled by divers was analyzed. The amount of debris in and around the piers coupled with the high density of shell fragments also created high variation in the penetration depth at the frame deployed stations, with cross-sectional sedimentary structures masked or destroyed by debris (natural or anthropogenic) being dragged down by the prism cutting blade. While a copy of all images collected was provided to the client, given the variation in image feature preservation (regardless of whether they were taken with the frame-deployed or diver-deployed system), and because this variation in cross-sectional structural appearance was not really indicative of natural variance in the measured parameters, the best image (least disturbed) from each station was analyzed. A complete set of all the summary data measured from each image is presented in Appendix A.

The results for some SPI parameters are sometimes indicated in the data appendix or on the maps as being “Indeterminate” (Ind). This is a result of the sediments being either: 1) too compact for the profile camera to penetrate adequately, preventing observation of surface or subsurface sediment features, 2) too soft to bear the weight of the camera, resulting in over-penetration to the point where the sediment/water interface was above the window (imaging area) on the camera prism (the sediment/water interface must be visible to measure most of the key SPI parameters like aRPD depth, penetration depth, and infaunal successional stage), or 3) the biogenic and sedimentary stratigraphic structure was compromised or destroyed by sampling artifacts caused by the divers inserting the prism into the sediment (either vibrating or wiggling the camera to achieve greater penetration, which allowed suspended sediment to collect in between the cross-sectional profile and the faceplate of the prism)

SPI has been shown to be a powerful reconnaissance tool that can efficiently map gradients in sediment type, biological communities, or disturbances from physical forces or organic enrichment. The results and conclusions in this report are about dynamic processes that have been deduced from imaged structures; as such, they should be considered hypotheses available for further testing/confirmation. By employing Occam’s Razor, we feel reasonably assured that the most parsimonious explanation is usually the one borne out by subsequent data confirmation

3.1 PRISM PENETRATION DEPTH

Sediments throughout the site ranged from silt-clays with minor fractions of very fine to fine sand in the rows that ran under the pier, to silty sands as one progressed beyond the pier into Transect #7 (Figure 5). The addition of the AquaGate amendment material to the sediment surface also provided some surface armoring at select stations which impeded camera prism penetration compared to baseline conditions (Figure 6). The mean prism penetration depth in the study area ranged from 4.1 to 20.7 cm, with an overall site average of 14.6 cm; the spatial distribution of mean penetration depth at all stations sampled is shown in Figure 7.

3.2 THICKNESS OF GAC LAYER

Measureable deposits of AquaGate+PAC™ could be seen at 12 stations, while 7 stations showed only traces of the AquaGate particles in the upper oxidized layer of sediment (Figure 8). At those stations where the cap material could be detected, the average thickness ranged from trace layers to 17.1 cm, with an overall site average of 4.0 cm. The footprint of the cap is shown in Figure 9.

3.3 APPARENT REDOX POTENTIAL DISCONTINUITY DEPTH

The distribution of mean apparent RPD depths is shown in Figure 10; mean aRPD depths could not be measured at 4 of the stations sampled by divers because of sampling artifacts that caused distortions to the sediment profile and eliminated the possibility of any accurate measurements. While twelve of the stations had no detectable aRPD present because of the recent placement of the cap material (see Figure 10), the remaining stations had values ranging from 0.4 to 5.2 cm, with an overall site average of 1.7 cm.

3.4 INFAUNAL SUCCESSIONAL STAGE

The mapped distribution of infaunal successional stages is shown in Figure 11; while there was a noticeable change in biological community status compared to baseline conditions because of the recent disturbance to the area from the cap placement, presence of Stage 3 taxa (infaunal deposit feeders) was evident at 19 of the 42 stations. Three of the stations outboard of the pier (Stations 3-4, 4-4, and 5-4) that formerly had dense assemblages of tubes from large sabellid polychaetes in the baseline survey were now devoid of any of these assemblages after cap placement (Figure 12).

3.5 MAXIMUM BIOLOGICAL MIXING DEPTH

The spatial distribution of the maximum depth to which any biological activity was seen in the study area is shown in Figure 13. Evidence of infaunal burrowing was seen even in some of the images where there was no detectable aRPD due to the high sediment-oxygen demand of the cap amendment; maximum depth of biogenic activity ranged from 0 to 17.3 cm, with an overall site average of 10.5 cm.

4.0 DISCUSSION

As predicted after the baseline survey was completed, we did not have any difficulty detecting the presence of the AquaGate+PAC^{TM} particles in the profile images; even though the SPI survey was conducted only two weeks after the material had been placed, the covering of activated carbon particles had already dissolved off the underlying carrier granules (leaving what looked like white gravel on the sediment surface; see Figure 14) and was being worked into the underlying sediment by the burrowing activities of resident infauna. While some of the stations had the dense colonies of sabellid polychaetes eliminated from the cap placement, future surveys will determine whether or not they re-establish themselves at the 3 locations where they had previously existed but were buried by the capping operations.

The results from this survey showed that the placement of the activated cap amendment did not cover all of the originally targeted placement area with the AquaGate+PACTM material (Figure 15). It is premature at this point to predict whether or not the beneficial effects from the activated cap placement will not be as widespread as originally intended.

As noted from the baseline survey, it was still difficult to get accurate measurements of subsurface features from many of the images collected by divers at locations under the pier. We hope that with some additional instructions and having the benefit of the baseline and post-capping results to show the divers, they will be able to improve their "prism insertion" techniques in future monitoring surveys so that the number of sampling artifacts are decreased in the images from under the pier and will allow us to get more accurate measurements of parameters of interest in future monitoring efforts.

5.0
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FIGURES

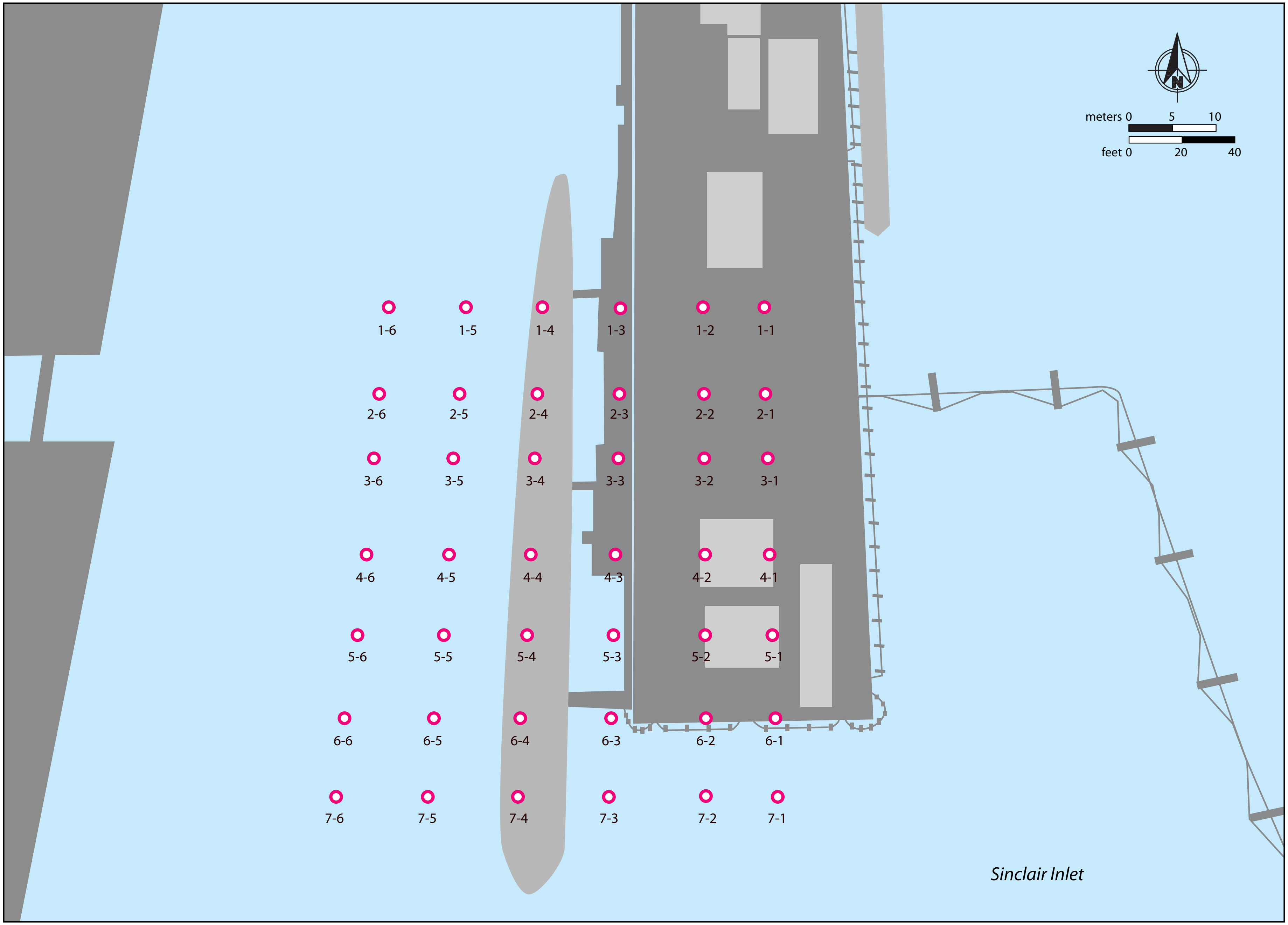


Figure 1: Location of SPI stations under and around Pier 7 at the Puget Sound Naval Shipyard in Bremerton, WA.

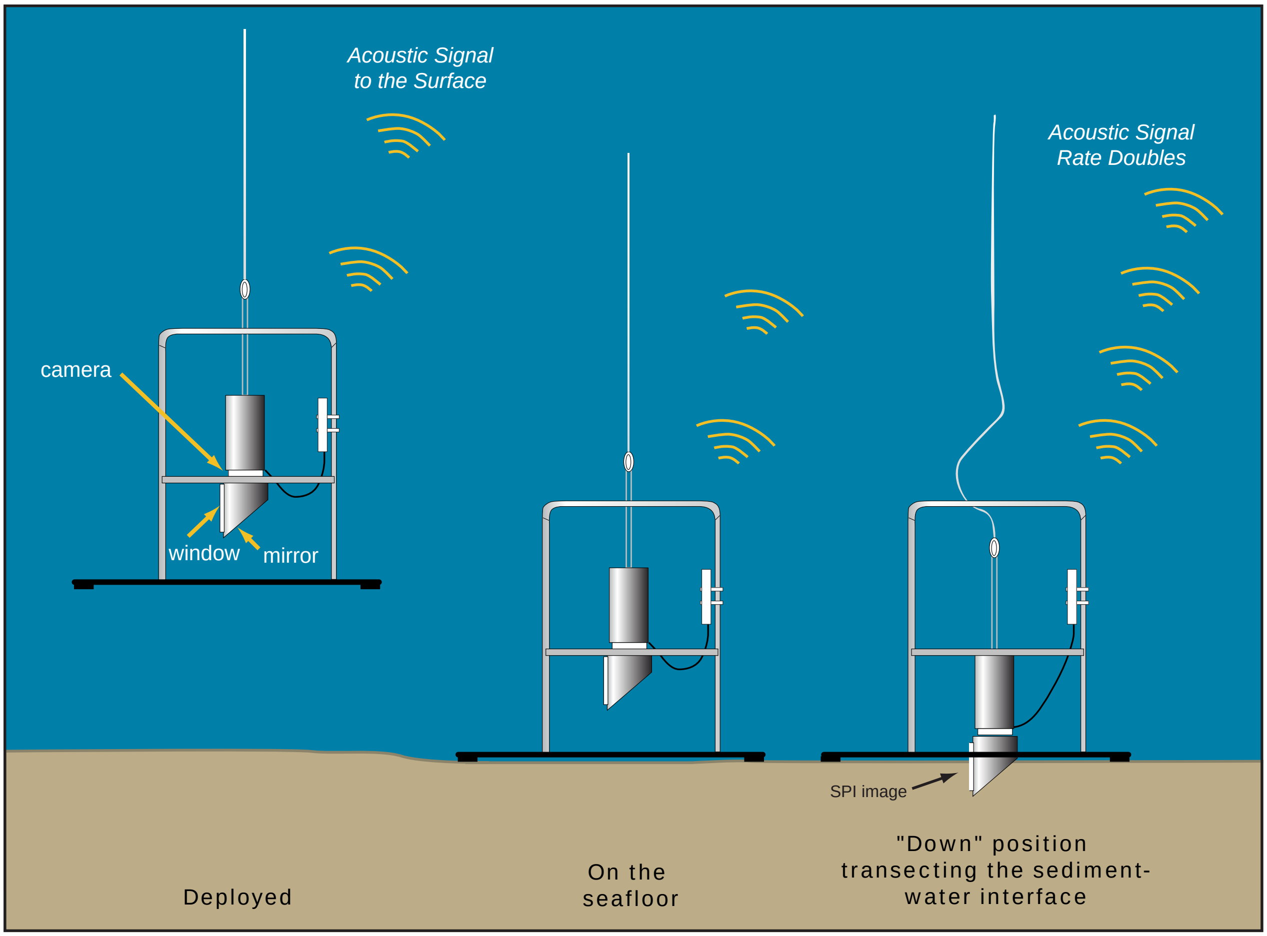


Figure 2: Deployment and operation of the SPI camera system. The central cradle of the camera is held in the “up” position by tension on the winch wire as it is being lowered to the seafloor (left); once the frame base hits the bottom (center), the prism is then free to penetrate the bottom (right) and take the photograph.

Figure 3: The hand-held SPI system used by divers for all stations that were located underneath Pier 7 in Bremerton.

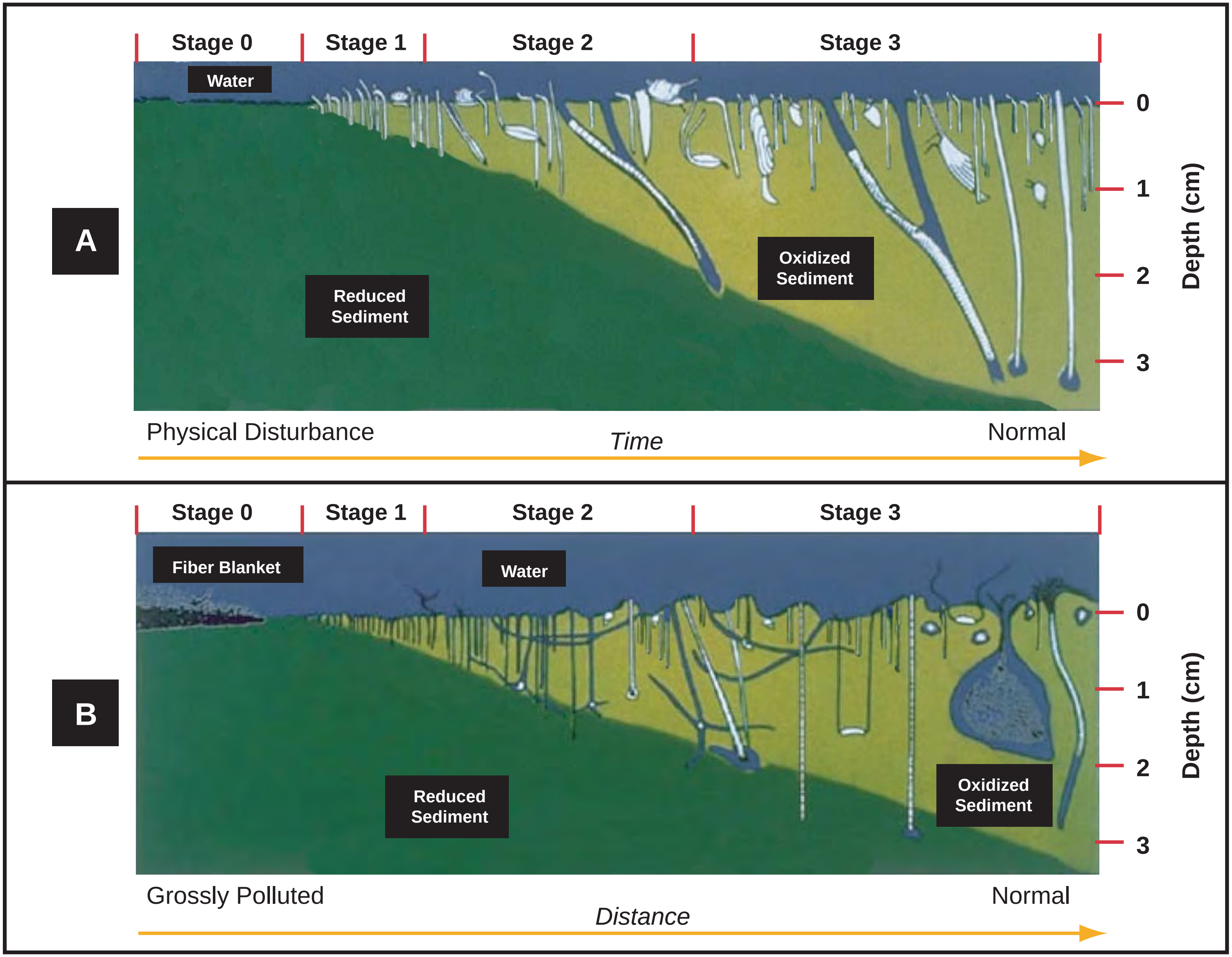
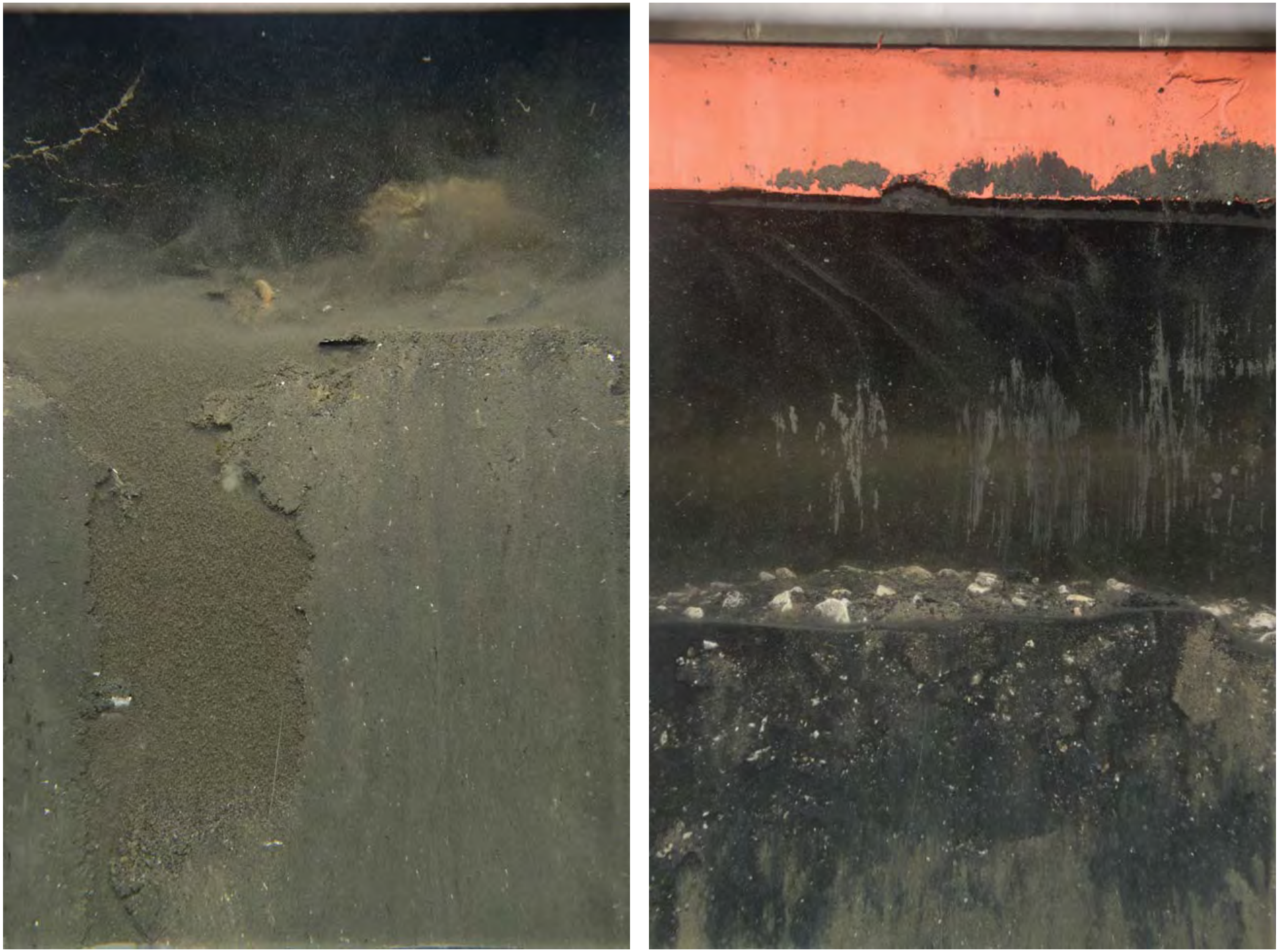


Figure 4: The stages of infaunal succession as a response of soft-bottom benthic communities to physical disturbance (top panel) or organic enrichment (bottom panel). From Rhoads and Germano, 1982.

1-5 **7-3**

Figure 5: The lower fraction of sand in the natural silt-clay sediments at stations toward the north of the grid allowed for greater prism penetration as seen in this profile image from Station 1-5 (left) as compared with some of the stations south of the pier with a greater fraction of fine to medium sand as seen in this image from Station 7-3 (right). Scale: width of each image = 14.5 cm.



before after

Figure 6: These profile images from Station 3-4 taken before (left) and after (right) cap placement show the effects of cap placement on camera prism penetration depth. Scale: width of each image = 14.5 cm.

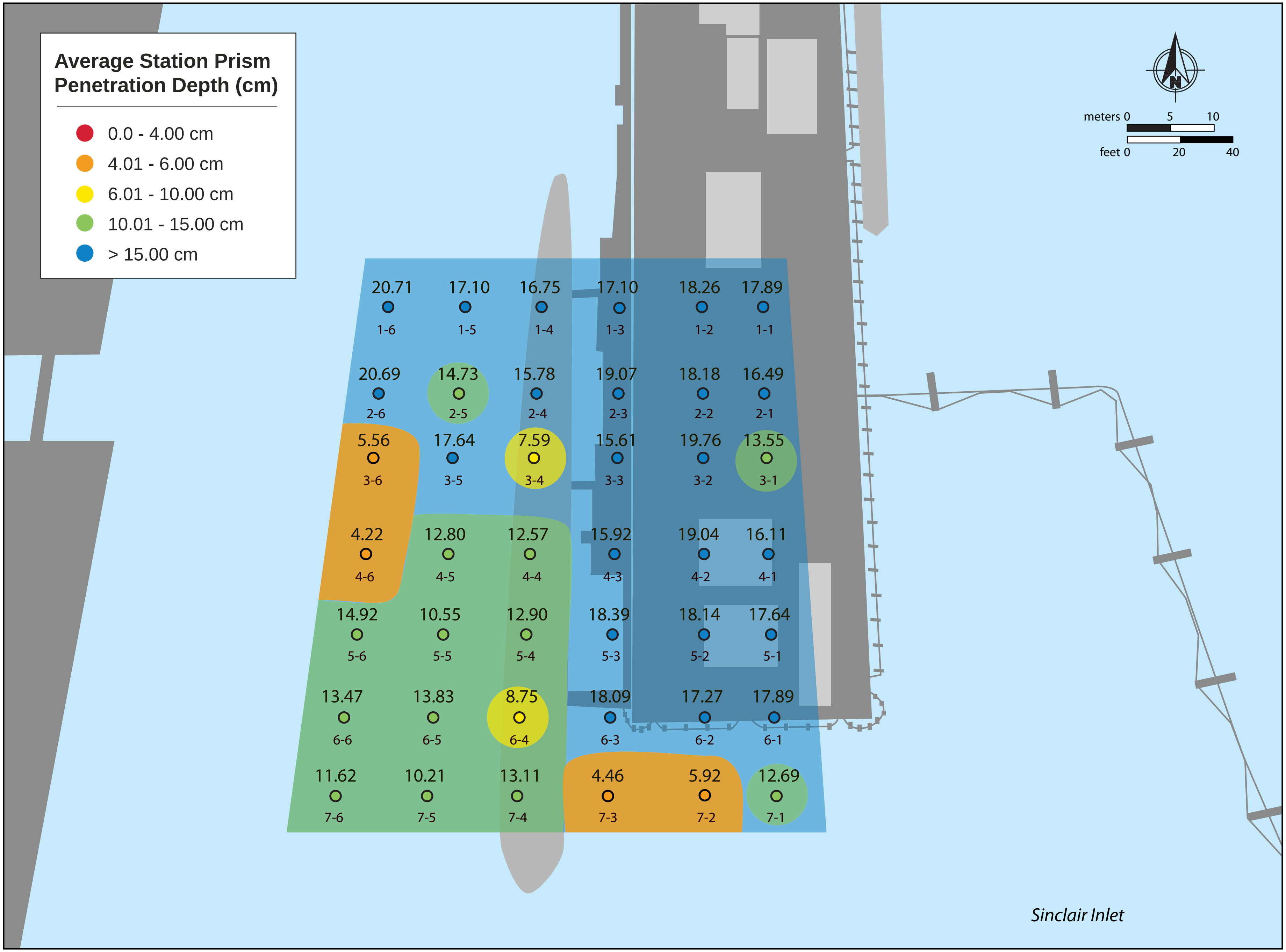
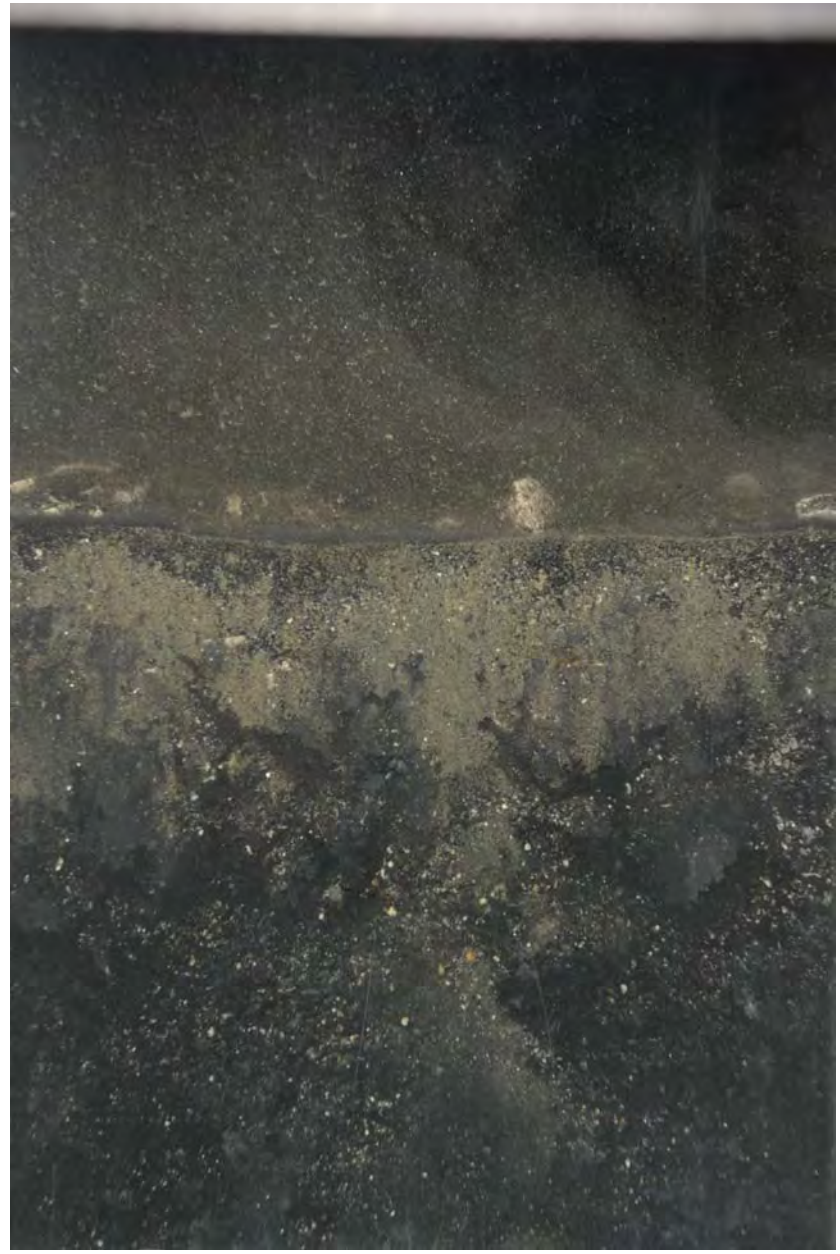


Figure 7: Spatial distribution of mean camera prism penetration depth (cm) at Pier 7 in October, 2012.

2-5



4-4

Figure 8: These profile images from Stations 2-5 (left) and 4-4 (right) show the difference between locations with just traces of AquaGate particles (left) versus those with a thicker deposit (right). Scale: width of each image = 14.5 cm.

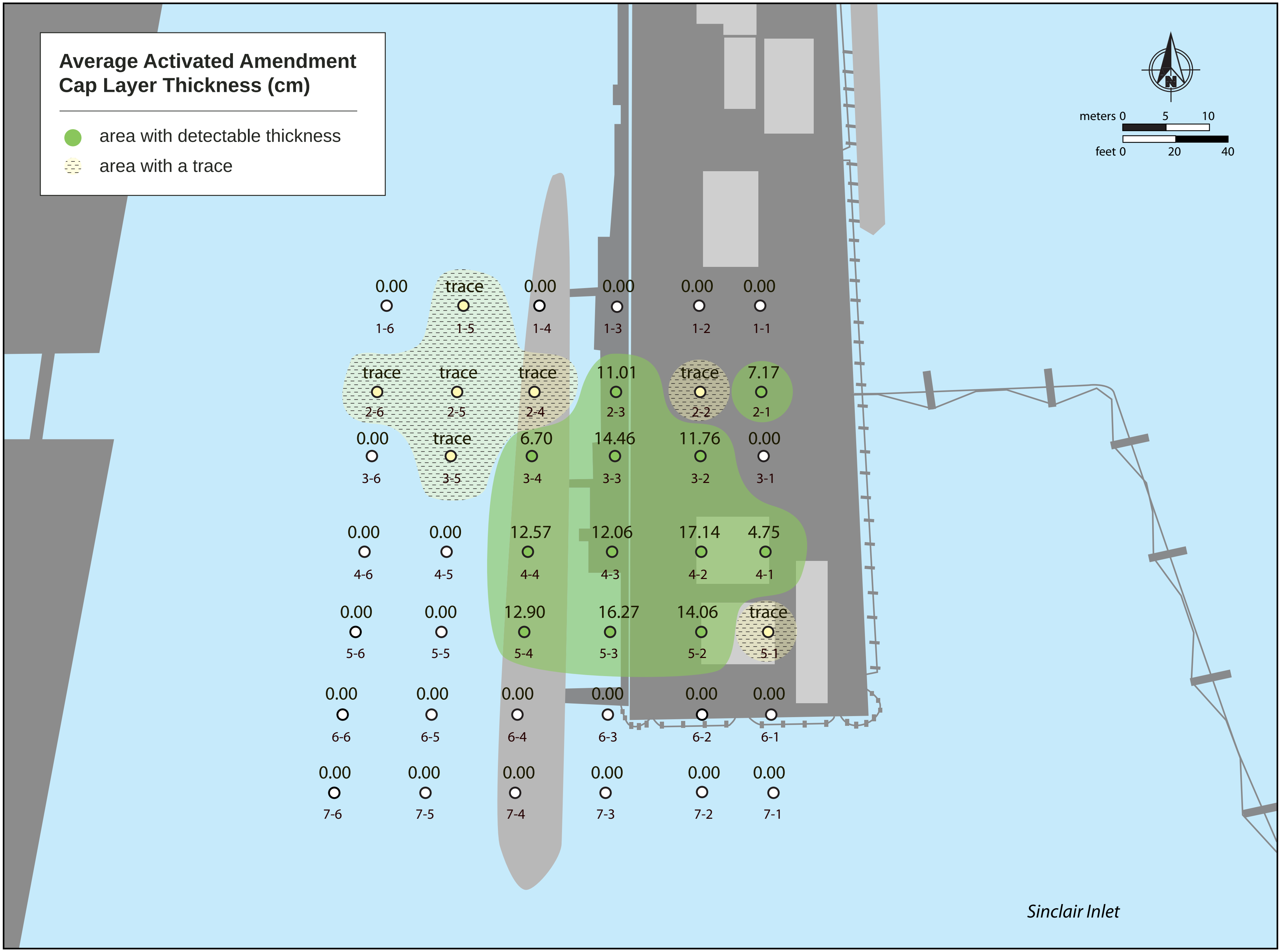


Figure 9: Spatial distribution and average depositional thickness (cm) of the AquaGate +PAC™ material placed at locations in and around Pier 7 in Bremerton, WA.

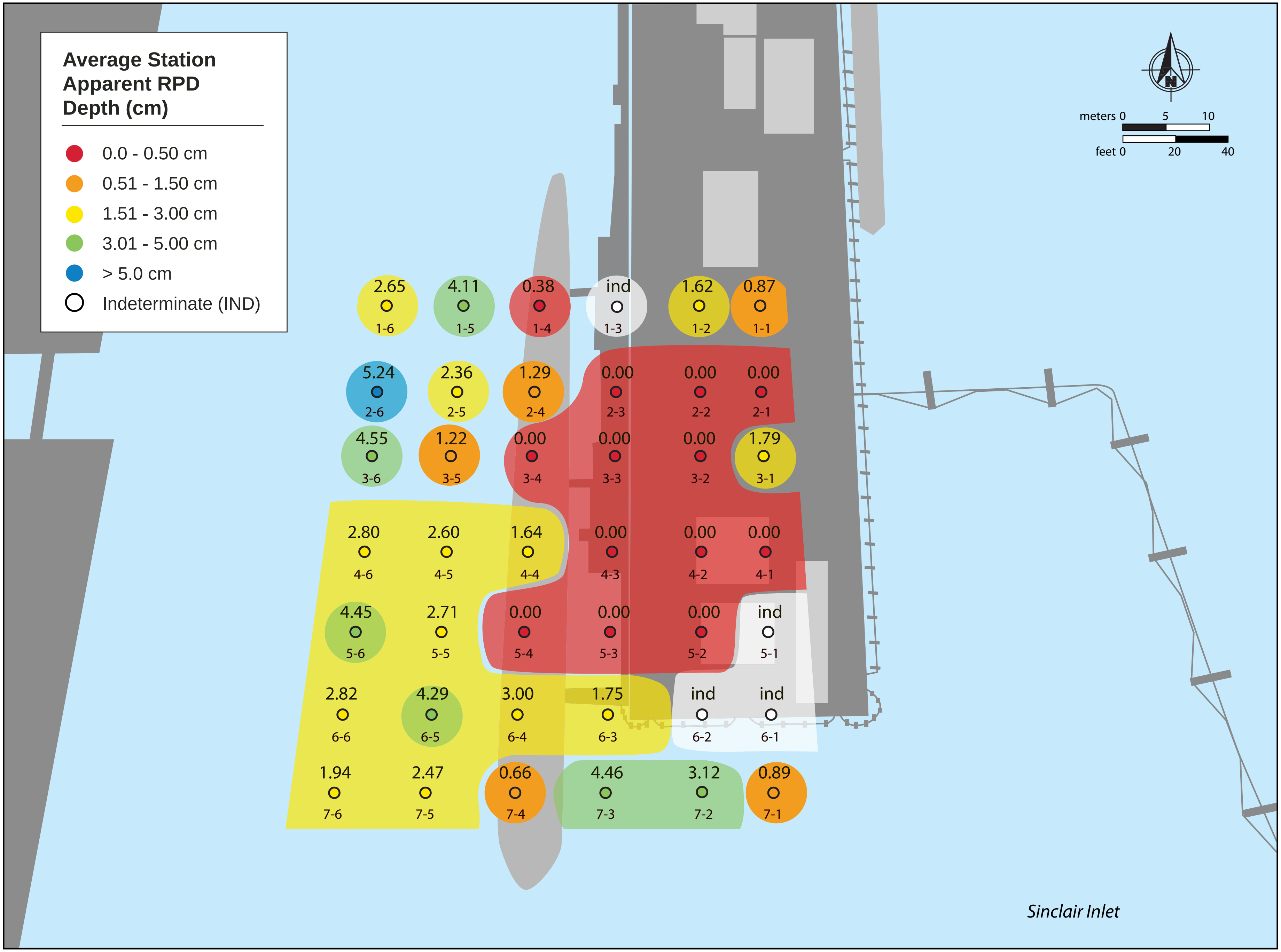


Figure 10: Spatial distribution of mean apparent RPD depth (cm) at Pier 7 in October, 2012.

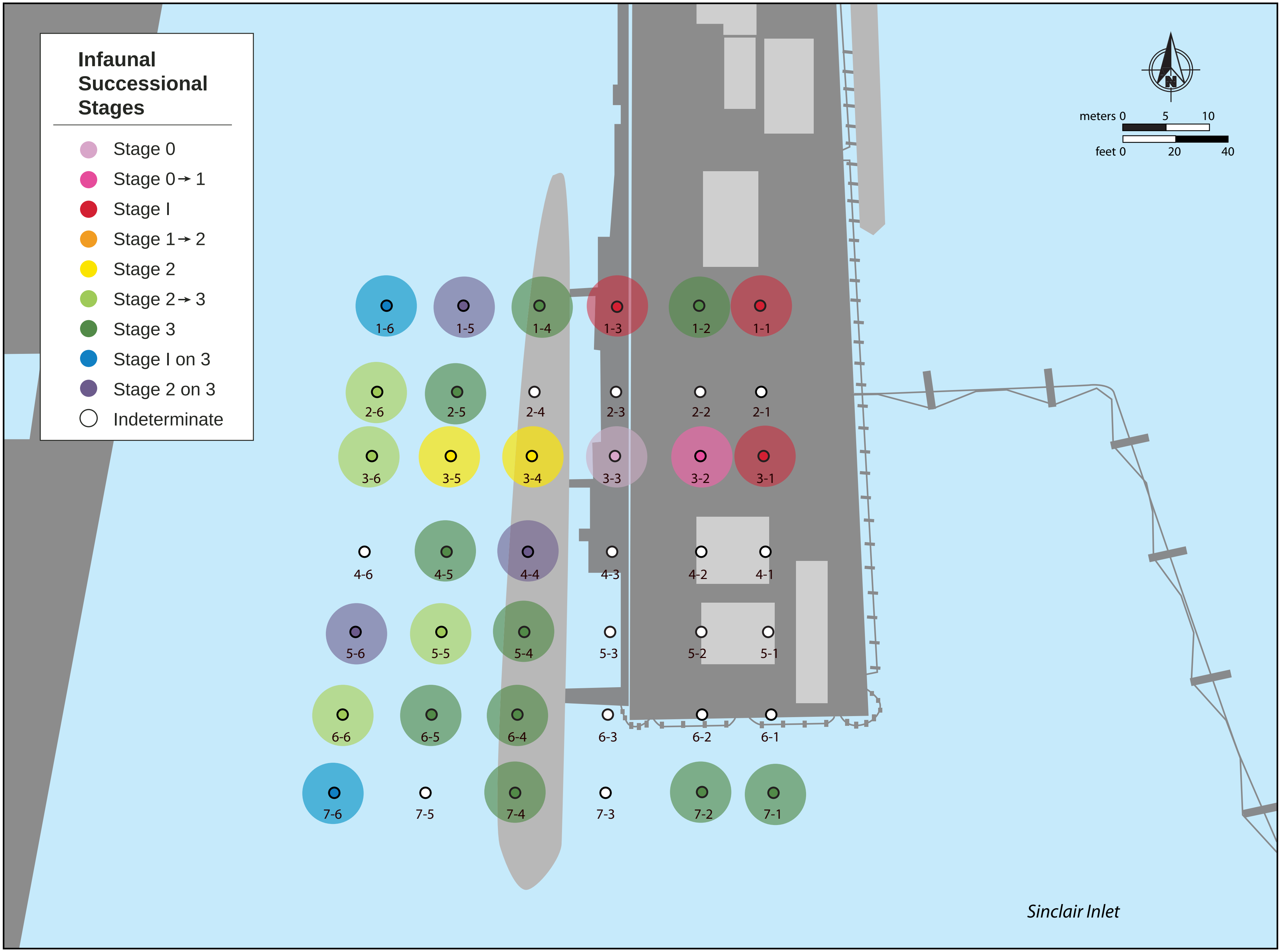


Figure 11: Spatial distribution of infaunal successional stages at Pier 7 in October, 2012.

before **after**

Figure 12: These profile images from Station 5-4 taken before (left) and after (right) cap placement show how placement of the cap material eliminated the assemblage of large sabellid polychaete tubes that were present during the baseline survey. Scale: width of each image = 14.5 cm.

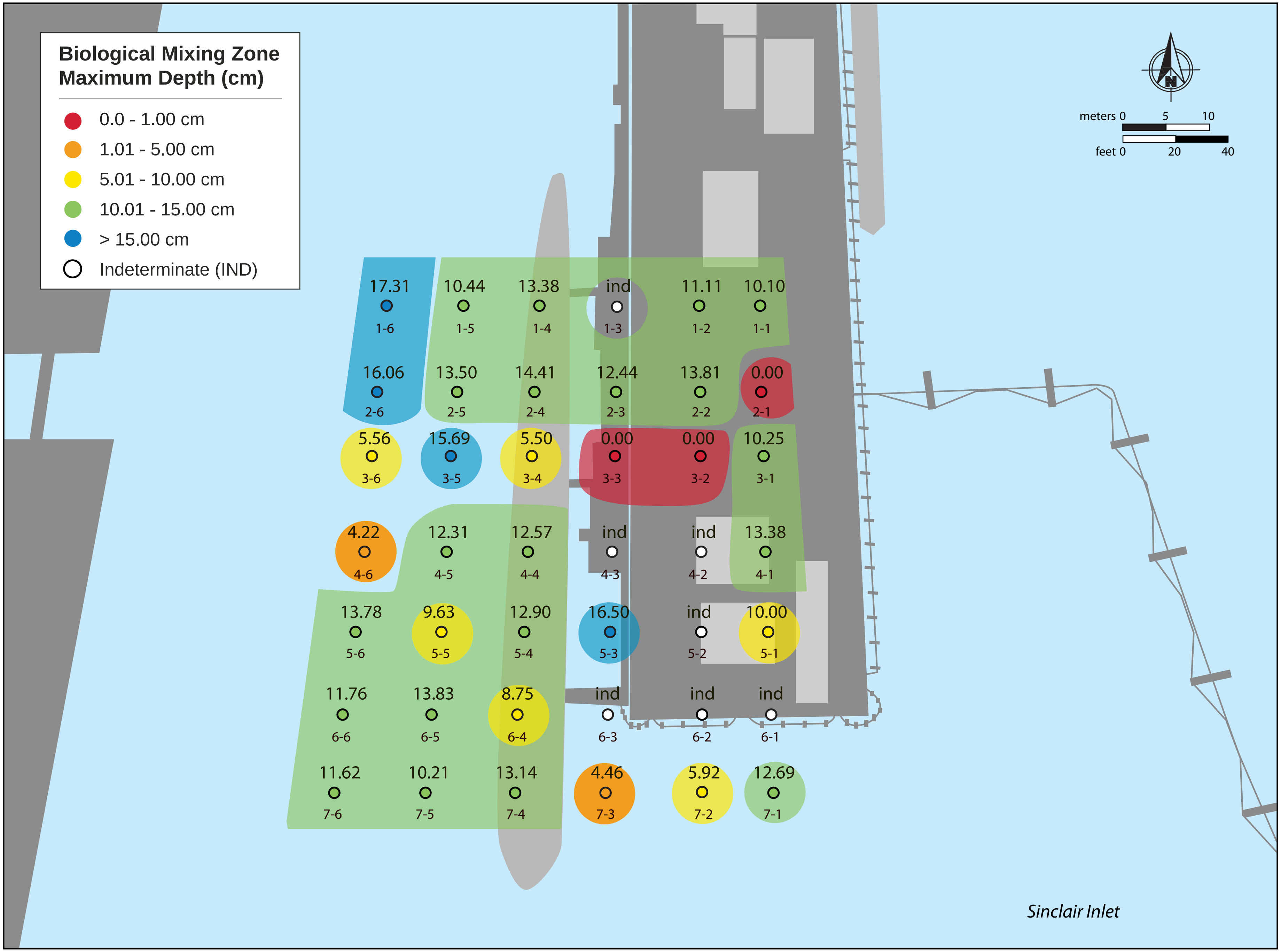
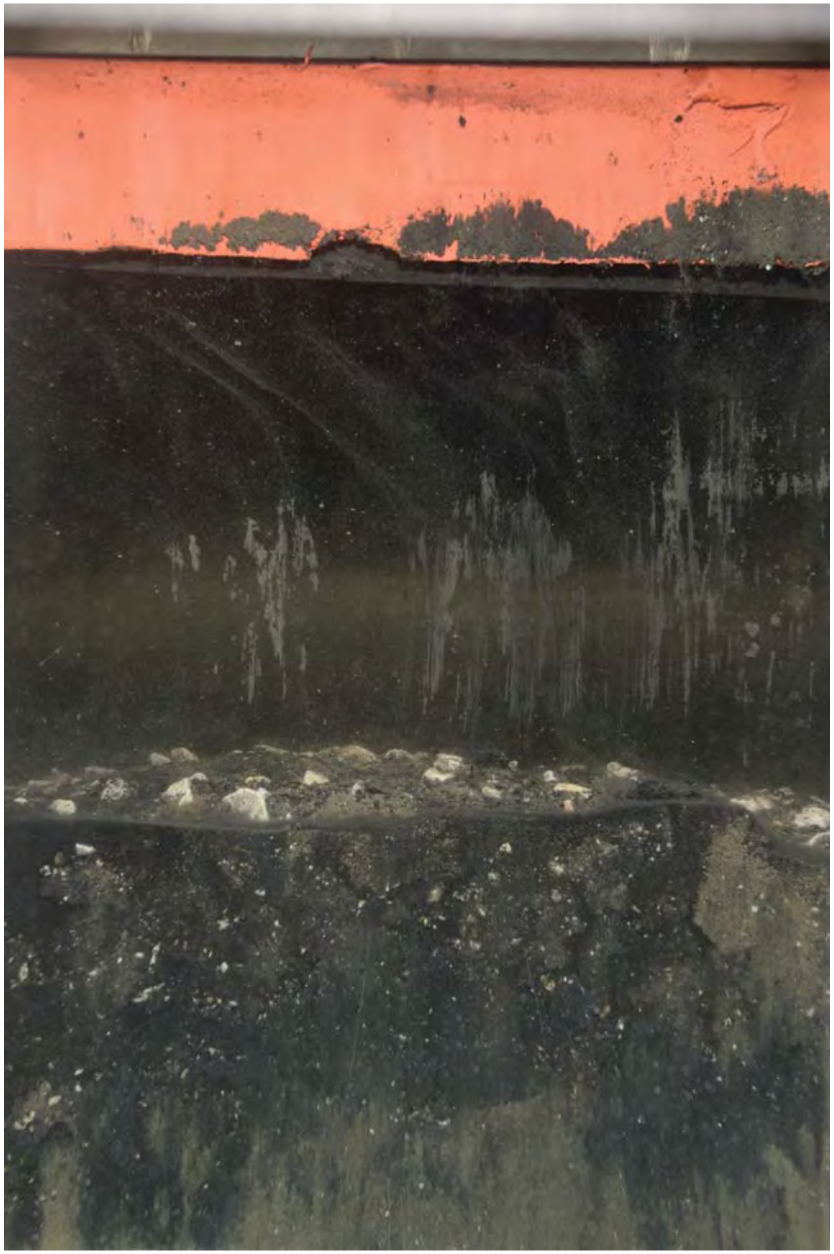


Figure 13: Spatial distribution of maximum biological mixing depth at Pier 7 in October, 2012.



3-4

5-4

Figure 14: These profile images from Stations 3-4 (left) and 5-4 (right) show how the activated carbon covering on the carrier particles for the AquaGate+PAC^{TM} has dissolved off the carrier granules, leaving a surface armoring of white pebbles while the carbon particles are being re-worked throughout the underlying sediment column. Scale: width of each image = 14.5 cm.

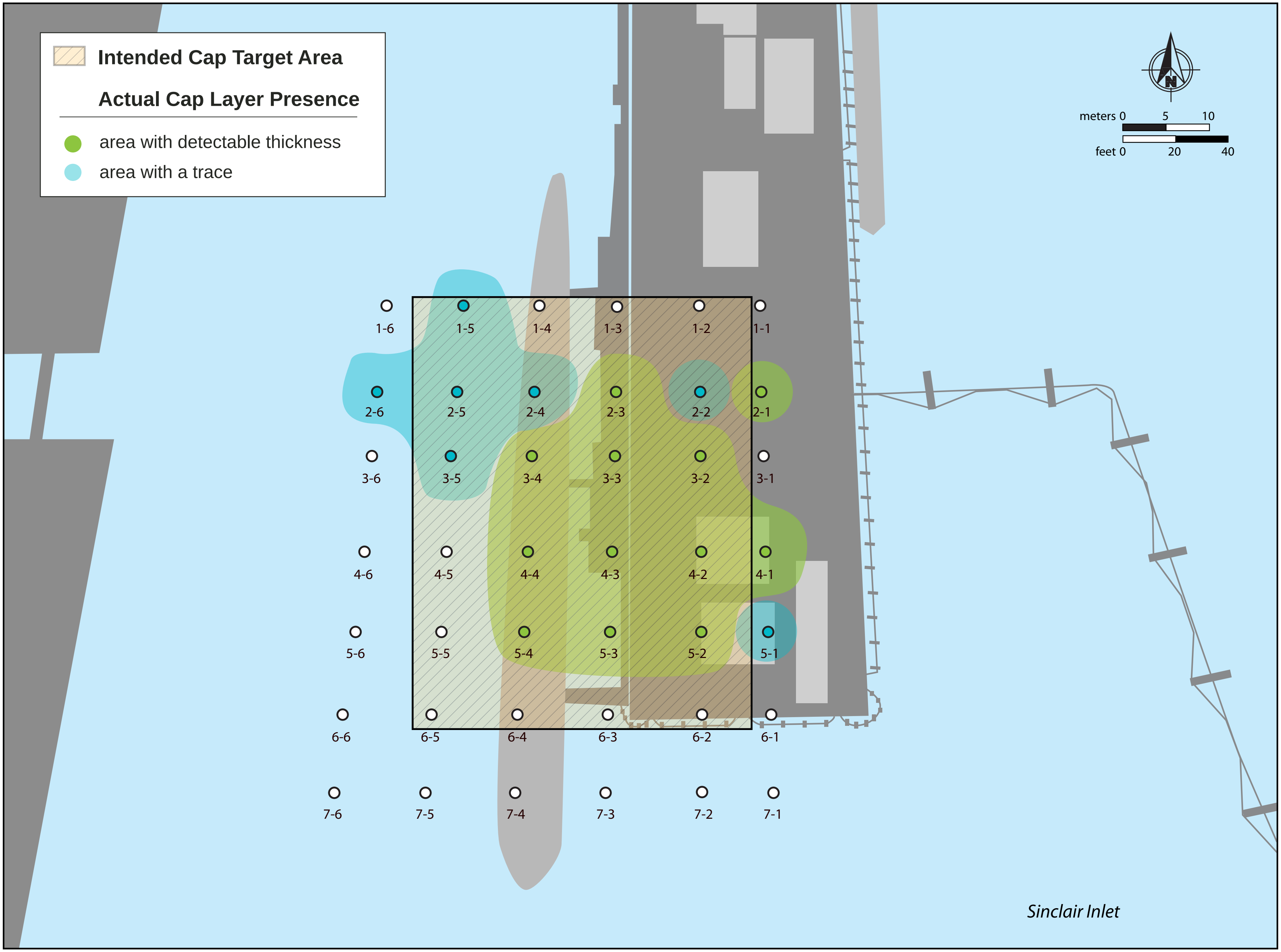


Figure 15: Comparison of the intended cap target area with the actual cap presence measured in the October 2012 SPI survey.

APPENDIX A

Sediment Profile Image Analysis Results

STATION	Frame or Hand-Held	REP	DATE	TIME	Calibration Constant	Penetra-tion Area (sq.cm)	Average Penetration (cm)	GAC Layer Area (sq.cm)	Mean GAC Layer depth (cm)	RPD Area (sq.cm)	Mean RPD (cm)	Mixing Zone Max Depth (cm)	Successional Stage	COMMENT
T 1-1	H	C	10/31/2012	7:09:40	14.5995	261.14	17.89	0.00	0.00	12.77	0.87	10.10	Stage 1	depth; no GAC present
T 1-2	H	E	10/31/2012	7:16:45	14.5995	266.59	18.26	0.00	0.00	23.72	1.62	11.11	Stage 3	Sandy silt; SWI covered with med-sized shell frag, smaller shell fragments incorporated in upper 10cm; large polychaete at depth; no GAC layer
T 1-3	H	B	10/30/2012	15:17:24	14.5995	249.67	17.10	0.00	0.00	ind	ind	ind	Stage 1	Silt-clay with minor fine sand fraction, thin layer of shell fragments on surface in background, incorporated through depth; aRPD and cross-sectional integrity compromised by diver insertion & disturbance; no GAC layer present
T 1-4	F	A	10/31/2012	14:51:45	14.5131	243.05	16.75	0.00	0.00	5.55	0.38	13.38	Stage 3	Silt-clay with patches of Beggiatoa at surface; patchy, discontinuous aRPD; sabellid tube on surface; low 02 in benthic boundary layer.
T 1-5	F	A	10/31/2012	14:32:34	14.5131	248.25	17.10	0.00	trace	59.60	4.11	10.44	Stage 2 on 3	Silt-clay with traces of GAC; void at base of aRPD
T 1-6	F	B	10/31/2012	14:40:42	14.5131	300.58	20.71	0.00	0.00	38.49	2.65	17.31	Stage 1 on 3	Silt-clay with minor very fine sand fraction, evidence of subsurface burrowing throughout profile.
T 2-1	H	F	10/31/2012	7:02:56	14.5995	240.82	16.49	104.72	7.17	0.00	0.00	0.00	indeterminate	GAC layer dominate in upper 6-7 cm, incorporated in bits with sediment through rest of depth; surface layer of shell frag, fine structure in profile eliminated from diver sampling artifact, impossible to determine successional stage or max BMD
T 2-2	H	B	10/30/2012	14:42:55	14.5995	265.43	18.18	trace	trace	0.00	0.00	13.81	indeterminate	Sandy silt with organic debris and shell fragments at surface; uneven surface; very small patches of oxy sed and GAC both at SWI and at depth; cross sectional sedimentary structure disturbed/destroyed by diver prism vibration.
T 2-3	H	A	10/30/2012	14:51:23	14.5995	278.48	19.07	160.74	11.01	0.00	0.00	12.44	indeterminate	GAC layer most of depth, up to 11cm, small shell fragments throughout and a few on surface; silty sed with shell fragments below GAC to depth, cross-sectional detail obliterated by diver sampling artifact
T 2-4	F	B	10/31/2012	13:59:34	14.5131	229.01	15.78	trace	trace	18.76	1.29	14.41	indeterminate	Disturbance at SWI and burrow on right edge appear to be caused by artifact dragdown of bivalve shell; traces of small GAC particles within oxidized surface layer, but no distinct deposit present.
T 2-5	F	A	10/31/2012	14:11:18	14.5131	213.79	14.73	trace	trace	34.32	2.36	13.50	Stage 3	Very fine sandy silt with traces of GAC particles in surface oxidized layer; some particles dragged to depth; appears that just a few mm dusting of particles originally landed in this location, no distinct deposit.
T 2-6	F	B	10/31/2012	14:19:01	14.5131	300.21	20.69	trace	trace	76.01	5.24	16.06	Stage 2 -> 3	Silt clay with faintest trace of GAC particles (< 50) sprinkled throughout oxidized layer, less than at Station 2-5; evidence of subsurface burrowing.
T 3-1	H	A	10/30/2012	14:19:44	14.5995	197.80	13.55	0.00	0.00	26.12	1.79	10.25	Stage 1	Very fine sandy silt with organic debris on surface and shell fragments throughout profile; fine structure of profile obliterated by diver artifact, a few grains of GAC visible but no distinct deposit.
T 3-2	H	A	10/30/2012	14:26:45	14.5995	288.52	19.76	171.66	11.76	0.00	0.00	0.00	Stage 0	GAC layer upper 12 cms, more to the right, sediment at depth and more to left at an angle; as with other hand-held shots, there is a smear from camera, and diver insertion at angle along with prism wiggling is distorting any stratigraphy that was present.
T 3-3	H	B	10/30/2012	14:31:43	14.5995	227.97	15.61	211.13	14.46	0.00	0.00	0.00	Stage 0 -> 1	GAC layer throughout almost all of depth, GAC carrier pebbles visible on surface; as with other diver samples, profile stratigraphy distorted by sampling artifact.
T 3-4	F	C	10/31/2012	11:08:07	14.5131	110.16	7.59	97.21	6.70	0.00	0.00	5.50	Stage 2	GAC layer throughout depth; carrier vehicle pebbles visible on surface, evidence of subsurface burrowing.
T 3-5	F	C	10/31/2012	10:53:40	14.5131	256.00	17.64	trace	trace	17.68	1.22	15.69	Stage 2	Very fine sandy silt with traces of GAC particles in surface oxidized layer; some particles dragged to depth; appears that just a few mm dusting of particles originally landed in this location, no distinct deposit.
T 3-6	F	A	10/31/2012	10:44:32	14.5131	80.70	5.56	0.00	0.00	65.97	4.55	5.56	Stage 2 -> 3	Compact silty sand; aRPD extends to base of image; small worms visible in upper cms of aRPD; no trace of GAC
T 4-1	H	C	10/30/2012	13:36:08	14.5995	235.23	16.11	69.29	4.75	0.00	0.00	13.38	indeterminate	GAC layer in upper 4-5 cms, patchy in depth; GAC carrier residuals and shells at surface; shell fragments incorporated throughout profile, fine-scale stratigraphy compromised by diver sampling artifact.
T 4-2	H	A	10/30/2012	13:39:45	14.5995	278.03	19.04	250.27	17.14	0.00	0.00	ind	indeterminate	GAC layer throughout most of depth; GAC carrier pebbles on surface; biogenic structure and sediment stratigraphy destroyed by diver sampling artifact.
T 4-3	H	A	10/30/2012	13:42:33	14.5995	232.46	15.92	176.12	12.06	0.00	0.00	ind	indeterminate	GAC layer throughout most of depth; GAC carrier pebbles on surface, shell fragments in upper cms; biogenic and sediment stratigraphy not preserved due to diver-induced artifacts.
T 4-4	F	B	10/31/2012	10:10:15	14.5131	182.44	12.57	182.44	12.57	23.74	1.64	12.57	Stage 2 on 3	GAC layer incorporated throughout entire depth, mixed with sed in upper 4 cms, thin GAC layer along SWI too along with carrier pebbles; represents ideal outcome.
T 4-5	F	C	10/31/2012	10:22:30	14.5131	185.83	12.80	0.00	0.00	37.74	2.60	12.31	Stage 3	Silty very fine sand, coarser grains near surface; large open burrow to void from SWI to <8cm depth, some trace of GAC particles in oxidized layer.
T 4-6	F	B	10/31/2012	10:27:18	14.5131	61.28	4.22	0.00	0.00	40.65	2.80	4.22	indeterminate	Consolidated silty very fine sand, small worms near base of image; not enough penetration to determine successional stage; traces of individual GAC particles in surface oxidized layer.
T 5-1	H	A	10/30/2012	13:18:13	14.5995	257.49	17.64	trace	trace	ind	ind	10.00	indeterminate	Very fine sandy silt with large shells, including mussel shells, on surface; small shell fragments incorporated in upper 7 cm; biogenic structure & fine-scale stratigraphy destroyed by diver sampling artifacts.
T 5-2	H	D	10/31/2012	7:47:14	14.5995	264.89	18.14	205.31	14.06	0.00	0.00	ind	indeterminate	GAC layer throughout most of depth; GAC carrier pebbles visible on surface, biogenic structure and sediment stratigraphy compromised by diver sampling artifact.
T 5-3	H	A	10/30/2012	13:24:38	14.5995	268.52	18.39	237.46	16.27	0.00	0.00	16.50	indeterminate	GAC layer throughout most of depth; GAC carrier pebbles on surface; evidence of subsurface burrowing visible even though much of stratigraphy is compromised by diver artifact.
T 5-4	F	B	10/31/2012	11:49:38	14.5131	187.21	12.90	187.21	12.90	0.00	0.00	12.90	Stage 3	GAC layer throughout image, GAC carrier pebbles on surface; traces of buried sabellids at depth; GAC layer exceeds prism penetration depth.
T 5-5	F	A	10/31/2012	11:32:27	14.5131	153.17	10.55	0.00	0.00	39.27	2.71	9.63	Stage 2 -> 3	Very fine sandy silt with a few GAC particles in oxidized layer; sabellid tubes on surface; largely undisturbed since baseline.
T 5-6	F	C	10/31/2012	11:26:31	14.5131	216.60	14.92	0.00	0.00	64.59	4.45	13.78	Stage 2 on 3	Very fine sandy silt with a layer of coarser grains in upper cm, esp. on right; fauna above SWI in background; small worms below aRPD on left and at depth on right
T 6-1	H	A	10/30/2012	12:53:38	14.5995	261.20	17.89	0.00	0.00	ind	ind	ind	indeterminate	Silty sediment with lots of shell fragments incorporated throughout depth and on surface, biogenic and sedimentary structure compromised by diver sampling artifacts.

STATION	Frame or Hand-Held	REP	DATE	TIME	Calibration Constant	Penetra-tion Area (sq.cm)	Average Penetration (cm)	GAC Layer Area (sq.cm)	Mean GAC Layer depth (cm)	RPD Area (sq.cm)	Mean RPD (cm)	Mixing Zone Max Depth (cm)	Successional Stage	COMMENT
T 6-2	H	A	10/30/2012	12:56:54	14.5995	252.16	17.27	0.00	0.00	ind	ind	ind	indeterminate	Silty sediment with lots of shell fragments incorporated throughout depth and on surface, biogenic and sedimentary structure compromised by diver sampling artifacts.
T 6-3	H	A	10/30/2012	13:01:15	14.5995	264.08	18.09	0.00	0.00	25.49	1.75	ind	indeterminate	Silty sediment with lots of shell fragments incorporated throughout depth and on surface, biogenic and sedimentary structure compromised by diver sampling artifacts.
T 6-4	F	A	10/31/2012	9:33:45	14.5131	127.03	8.75	0.00	0.00	43.61	3.00	8.75	Stage 3	Very fine sandy silt with traces of GAC particles in surface oxidized layer; sabellid tubes at surface, evidence of subsurface burrowing.
T 6-5	F	B	10/31/2012	9:49:33	14.5131	200.65	13.83	0.00	0.00	62.26	4.29	13.83	Stage 3	Very fine sandy silt with large burrow/pit at center to ~6.2 cm; no trace of GAC layer.
T 6-6	F	B	10/31/2012	9:55:07	14.5131	195.44	13.47	0.00	0.00	40.87	2.82	11.76	Stage 2 -> 3	Very fine sandy silt with minimal trace of GAC particles, evidence of subsurface burrowing, profile similar to baseline image.
T 7-1	F	B	10/31/2012	8:27:09	14.5131	184.23	12.69	0.00	0.00	12.96	0.89	12.69	Stage 3	Very fine sandy silt with coarser grains near SWI; bivalve shell dragged down by prism blade creating large burrow artifact; no GAC particles
T 7-2	F	A	10/31/2012	8:35:21	14.5131	85.89	5.92	0.00	0.00	45.25	3.12	5.92	Stage 3	Poorly sorted medium to coarse sand with partially submerged crab against faceplate; no GAC present.
T 7-3	F	A	10/31/2012	8:42:06	14.5131	64.79	4.46	0.00	0.00	64.79	4.46	4.46	indeterminate	Sand, coarse grains, shell fragments on surface; rocks and algae on surface
T 7-4	F	A	10/31/2012	8:59:40	14.5131	190.21	13.11	0.00	0.00	9.55	0.66	13.14	Stage 3	Radical shift in grain size compared to previous stations in this row; silt-clay with old sabellid tubes on surface; anemone(s) at SWI and dragged to depth by prism blade.
T 7-5	F	A	10/31/2012	9:09:52	14.5131	148.19	10.21	0.00	0.00	35.82	2.47	10.21	indeterminate	Sandy silt with profile disturbed by prism dragging anemone to depth; most likely Stage 2 or 3 present.

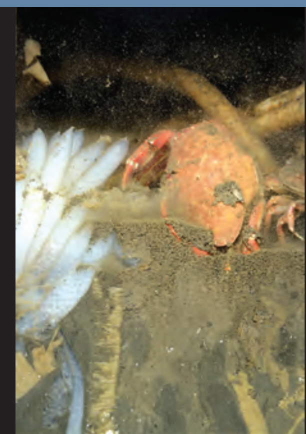
January 2014

Sediment Profile Imaging Report

Demonstration of *in-situ* Treatment of Contaminated Sediments with Reactive Amendments: Post-Cap Survey #2







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Hart Crowser Job Number 1789701,
Work Order #1

Prepared by

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Sediment Profile Imaging Report

DEMONSTRATION OF *IN-SITU* TREATMENT OF CONTAMINATED SEDIMENTS WITH REACTIVE AMENDMENTS: POST CAP SURVEY #2

Prepared for

Hart Crowser, Inc.
1700 Westlake Avenue North, Suite 200
Seattle, WA 98109-3856

Hart Crowser Job Number 1789701, Work Order #1

Prepared by

Germano & Associates, Inc.
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January, 2014

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1.0 INTRODUCTION

As part of a multidisciplinary effort to investigate the feasibility of treating contaminated sediments in active Department of Defense (DoD) harbors, Germano & Associates, Inc. (G&A) performed a Sediment Profile Imaging (SPI) survey around Pier 7 at the Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF) Bremerton site. The purpose of this SPI survey was to document conditions at a total of 50 stations following placement of a reactive amendment cap placed on the sediment surface.

2.0 MATERIALS AND METHODS

Between October 14-16, 2012, 141 tons of AquaGate +PAC™ were placed in the target area for remediation under and around Pier 7 at PSNS & IMF Bremerton site (Johnston et al. 2013). An initial post-placement SPI survey was performed on October 30-31, 2012, 2 weeks after the capping operation was finished. Scientists from G&A collected a series of sediment profile images at a total of 42 stations (Germano and Associates, 2013) and mapped the presence and thickness of the cap layer (Figure 1). Approximately one year later, on August 13-14, 2013, scientists from G&A collected sediment profile images from the same 42 stations as well as an additional 8 stations (Figure 2) to monitor the recolonization of the cap as well as the active reworking of the reactive amendment into the sediment by resident infauna. On both surveys, two different versions of an Ocean Imaging Systems Model 3731 sediment profile camera were used; a standard SPI system using a surrounding frame that was deployed from a vessel (Figure 3), and a hand-held aluminum SPI system (Figure 4) deployed by PSNS & IMF divers for stations that were located under the pier and inaccessible for sampling with a boat.

SPI was developed almost four decades ago as a rapid reconnaissance tool for characterizing physical, chemical, and biological seafloor processes and has been used in numerous seafloor surveys throughout North America, Asia, Europe, and Africa (Rhoads and Germano 1982, 1986, 1990; Revelas et al. 1987; Diaz and Schaffner, 1988; Valente et al. 1992; Germano et al. 2011). The sediment profile camera works like an inverted periscope. A Nikon D7000 16.2-megapixel SLR camera with two 8-gigabyte secure digital (SD) cards is mounted horizontally inside a watertight housing on top of a wedge-shaped prism. The prism has a Plexiglas® faceplate at the front with a mirror placed at a 45° angle at the back. The camera lens looks down at the mirror, which is reflecting the image from the faceplate. The prism has an internal strobe mounted inside at the back of the wedge to provide illumination for the image; this chamber is filled with distilled water, so the camera always has an optically clear path. This wedge assembly is mounted on a moveable carriage within a stainless steel frame. The frame is lowered to the seafloor on a winch wire, and the tension on the wire keeps the prism in its “up” position. When the frame comes to rest on the seafloor, the winch wire goes slack (see Figure 3) and the camera prism descends into the sediment at a slow, controlled rate by the dampening action of a hydraulic piston so as not to disturb the sediment-water interface. On the way down, it trips a trigger that activates a time-delay circuit of variable length (operator-selected) to allow the camera to penetrate the seafloor before any image is taken. The knife-sharp edge of the prism transects the sediment, and the prism penetrates the bottom. The strobe is discharged after an appropriate time delay to obtain a cross-sectional image of the upper 20 cm of the sediment column. The resulting images give the viewer the same perspective as looking through the side of an aquarium half-filled with sediment. After the first image is obtained at the first location, the camera is then

raised up about 2 to 3 meters off the bottom to allow the strobe to recharge; a wiper blade mounted on the frame removes any mud adhering to the faceplate. The strobe recharges within 5 seconds, and the camera is ready to be lowered again for a replicate image. Surveys can be accomplished rapidly by “pogo-sticking” the camera across an area of seafloor while recording positional fixes on the surface vessel.

The hand-held SPI system (Figure 4) works on the same design, except that there is no time delay once the watertight switch is activated by the diver after the prism is inserted into the sediment. There is no wiper blade on the hand-held system, so the diver needs to clean the faceplate of the camera prism manually with a scrub brush after each image is taken.

Two types of adjustments to the SPI system are typically made in the field: physical adjustments to the chassis stop collars on the frame-deployed system or adding/subtracting lead weights to the chassis to control penetration in harder or softer sediments, and electronic software adjustments to the Nikon D7000 to control camera settings. Camera settings (f-stop, shutter speed, ISO equivalents, digital file format, color balance, etc.) are selectable through a water-tight USB port on the camera housing and Nikon Control Pro® software. At the beginning of the survey, the time on both of the sediment profile cameras’ internal data loggers was synchronized with the clock on the sampling vessel to local time. Details of the camera settings for each digital image are available in the associated parameters file embedded in the electronic image file; for this survey, the ISO-equivalent was set at 640. The additional camera settings used were as follows: shutter speed was 1/250, f8, white balance set to flash, color mode to Adobe RGB, sharpening to none, noise reduction off, and storage in compressed raw Nikon Electronic Format (NEF) files (approximately 20 MB each). Electronic files were converted to high-resolution jpeg (14-bit) format files (49278 x 3264 pixels) using Nikon Capture NX2® software (Version 2.3.5.).

Three replicate images were taken at each station at the vessel-deployed frame stations, while 2 replicate images were taken by the divers at each of the under-pier stations; each SPI replicate is identified by the time recorded on the digital image file in the camera and in the field log on the vessel. The SD card was immediately surrendered at the completion of the survey to PSNS & IMF for review and approval for public distribution. The unique time stamp on the digital image was then cross-checked with the time stamp recorded in the written sample logs. After the images were cleared for public release, they were re-named with the appropriate station name based on the time stamp on each image.

Test exposures of the Kodak® Color Separation Guide (Publication No. Q-13) were made on deck at the beginning of the survey to verify that all internal electronic systems were working to design specifications and to provide a color standard against which final images could be checked for proper color balance. A spare camera and charged battery were carried in the field at all times to insure uninterrupted sample acquisition. After

deployment of the camera at each station, the frame counter was checked to make sure that the requisite number of replicates had been taken. In addition, a prism penetration depth indicator on the camera frame was checked to verify that the optical prism had actually penetrated the bottom to a sufficient depth. If images were missed (frame counter indicator or verification from digital download) or the penetration depth was insufficient (penetration indicator), chassis stops were adjusted and/or weights were added or removed, and additional replicate images were taken. Changes in prism weight amounts, the presence or absence of mud doors, and chassis stop positions were recorded for each replicate image.

Following completion of the field operations, the raw NEF image files were converted to high-resolution Joint Photographic Experts Group (jpeg) format files using the minimal amount of image file compression. Once converted to jpeg format, the intensity histogram (RGB channel) for each image was adjusted in Adobe Photoshop® to maximize contrast without distortion. The jpeg images were then imported to Sigmascan Pro® (Aspire Software International) for image calibration and analysis. Calibration information was determined by measuring 1-cm gradations from the Kodak® Color Separation Guide. This calibration information was applied to all SPI images analyzed. Linear and area measurements were recorded as number of pixels and converted to scientific units using the calibration information.

Measured parameters were recorded on a Microsoft® Excel© spreadsheet. G&A's senior scientist (Dr. J. Germano) subsequently checked all these data as an independent quality assurance/quality control review of the measurements before final interpretation was performed.

2.1 MEASURING, INTERPRETING, AND MAPPING SPI PARAMETERS

2.1.1 Prism Penetration Depth

The SPI prism penetration depth was measured from the bottom of the image to the sediment-water interface. The area of the entire cross-sectional sedimentary portion of the image was digitized, and this number was divided by the calibrated linear width of the image to determine the average penetration depth.

Prism penetration is a noteworthy parameter; if the number of weights used in the camera is held constant throughout a survey, the camera functions as a static-load penetrometer. Comparative penetration values from sites of similar grain size give an indication of the relative water content of the sediment. Highly bioturbated sediments and rapidly accumulating sediments tend to have the highest water contents and greatest prism penetration depths.

The depth of penetration also reflects the bearing capacity and shear strength of the sediments. Overconsolidated or relic sediments and shell-bearing sands resist camera penetration. Highly bioturbated, sulfitic, or methanogenic muds are the least consolidated, and deep penetration is typical. Seasonal changes in camera prism penetration have been observed at the same station in other studies and are related to the control of sediment geotechnical properties by bioturbation (Rhoads and Boyer 1982). The effect of water temperature on bioturbation rates appears to be important in controlling both biogenic surface relief and prism penetration depth (Rhoads and Germano 1982).

2.1.2 Thickness of Depositional Layers

Because of the camera's unique design, SPI can be used to detect the thickness of dredged material and depositional layers (like the reactive amendment). SPI is effective in measuring layers ranging in thickness from 1 mm to 20 cm (the height of the SPI optical window). During image analysis, the thickness of the newly deposited sedimentary layers can be determined by measuring the distance between the pre- and post-disposal sediment-water interface. Recently deposited material is usually evident because of its unique optical reflectance and/or color relative to the underlying material representing the pre-disposal surface. Also, in most cases, the point of contact between the two layers is clearly visible as a textural change in sediment composition, facilitating measurement of the thickness of the newly deposited layer.

2.1.3 Apparent Redox Potential Discontinuity Depth

Aerobic near-surface marine sediments typically have higher reflectance relative to underlying hypoxic or anoxic sediments. Surface sands washed free of mud also have higher optical reflectance than underlying muddy sands. These differences in optical reflectance are readily apparent in SPI images; the oxidized surface sediment contains particles coated with ferric hydroxide (an olive or tan color when associated with particles), while reduced and muddy sediments below this oxygenated layer are darker, generally gray to black (Fenchel 1969; Lyle 1983). The boundary between the colored ferric hydroxide surface sediment and underlying gray to black sediment is called the apparent redox potential discontinuity (aRPD).

The depth of the aRPD in the sediment column is an important time-integrator of dissolved oxygen conditions within sediment porewaters. In the absence of bioturbating organisms, this high reflectance layer (in muds) will typically reach a thickness of 2 mm below the sediment-water interface (Rhoads 1974). This depth is related to the supply rate of molecular oxygen by diffusion into the bottom and the consumption of that oxygen by the sediment and associated microflora. In sediments that have very high sediment oxygen demand (SOD), the sediment may lack a high reflectance layer even when the overlying water column is aerobic.

In the presence of bioturbating macrofauna, the thickness of the high reflectance layer may be several centimeters. The relationship between the thickness of this high reflectance layer and the presence or absence of free molecular oxygen in the associated porewaters must be considered with caution. The actual RPD is the boundary or horizon that separates the positive reduction potential (Eh) region of the sediment column from the underlying negative Eh region. The exact location of this Eh = 0 boundary can be determined accurately only with microelectrodes; hence, the relationship between the change in optical reflectance, as imaged with the SPI camera, and the actual RPD can be determined only by making the appropriate *in situ* Eh measurements. For this reason, the optical reflectance boundary, as imaged, was described in this study as the "apparent" RPD and it was mapped as a mean value. In general, the depth of the actual Eh = 0 horizon will be either equal to or slightly shallower than the depth of the optical reflectance boundary (Rosenberg et al., 2001). This is because bioturbating organisms can mix ferric hydroxide-coated particles downward into the bottom below the Eh = 0 horizon. As a result, the mean aRPD depth can be used as an estimate of the depth of porewater exchange, usually through porewater irrigation (bioturbation). Biogenic particle mixing depths can be estimated by measuring the maximum and minimum depths of imaged feeding voids in the sediment column. This parameter represents the particle mixing depths of head-down feeders, mainly polychaetes.

The rate of depression of the aRPD within the sediment is relatively slow in organic-rich muds, on the order of 200 to 300 micrometers per day; therefore this parameter has a long time constant (Germano and Rhoads 1984). The rebound in the aRPD is also slow (Germano 1983). Measurable changes in the aRPD depth using the SPI optical technique can be detected over periods of 1 or 2 months. This parameter is used effectively to document changes (or gradients) that develop over a seasonal or yearly cycle related to water temperature effects on bioturbation rates, seasonal hypoxia, SOD, and infaunal recruitment. Time-series RPD measurements following a disturbance can be a critical diagnostic element in monitoring the degree of recolonization in an area by the ambient benthos (Rhoads and Germano 1986).

The mean aRPD depth also can be affected by local erosion. The peaks of disposal mounds commonly are scoured by divergent flow over the mound. This scouring can wash away fines and shell or gravel lag deposits, and can result in very thin surface oxidized layer. During storm periods, erosion may completely remove any evidence of the aRPD (Fredette et al. 1988).

Another important characteristic of the aRPD is the contrast in reflectance at this boundary. This contrast is related to the interactions among the degree of organic loading, the bioturbation activity in the sediment, and the concentrations of bottom-water dissolved oxygen in an area. High inputs of labile organic material increase SOD and, subsequently, sulfate reduction rates and the associated abundance of sulfide end products. This results in more highly reduced, lower-reflectance sediments at depth and higher aRPD contrasts. In a region of generally low aRPD contrasts, images with high

aRPD contrasts indicate localized sites of relatively large inputs of organic-rich material such as phytoplankton, other naturally-occurring organic detritus, dredged material, or sewage sludge.

Because the determination of the aRPD requires discrimination of optical contrast between oxidized and reduced particles, it is difficult, if not impossible, to determine the depth of the aRPD in well-sorted sands of any size that have little to no silt or organic matter in them (Painter et al, 2007). When using SPI technology on sand bottoms, little information other than grain-size, prism penetration depth, and boundary roughness values can be measured; while oxygen has no doubt penetrated the sand beneath the sediment-water interface just due to physical forcing factors acting on surface roughness elements (Ziebis et al., 1996; Huettel et al., 1998), estimates of the mean aRPD depths in these types of sediments are indeterminate with conventional white light photography.

2.1.4 Infaunal Successional Stage

The mapping of infaunal successional stages is readily accomplished with SPI technology. These stages are recognized in SPI images by the presence of dense assemblages of near-surface polychaetes and/or the presence of subsurface feeding voids; both may be present in the same image. Mapping of successional stages is based on the theory that organism-sediment interactions in fine-grained sediments follow a predictable sequence after a major seafloor perturbation. This theory states that primary succession results in "the predictable appearance of macrobenthic invertebrates belonging to specific functional types following a benthic disturbance. These invertebrates interact with sediment in specific ways. Because functional types are the biological units of interest..., our definition does not demand a sequential appearance of particular invertebrate species or genera" (Rhoads and Boyer 1982). This theory is presented in Pearson and Rosenberg (1978) and further developed in Rhoads and Germano (1982) and Rhoads and Boyer (1982).

This continuum of change in animal communities after a disturbance (primary succession) has been divided subjectively into four stages: Stage 0, indicative of a sediment column that is largely devoid of macrofauna, occurs immediately following a physical disturbance or in close proximity to an organic enrichment source; Stage 1 is the initial community of tiny, densely populated polychaete assemblages; Stage 2 is the start of the transition to head-down deposit feeders; and Stage 3 is the mature, equilibrium community of deep-dwelling, head-down deposit feeders (Figure 5).

After an area of bottom is disturbed by natural or anthropogenic events, the first invertebrate assemblage (Stage 1) appears within days after the disturbance. Stage 1 consists of assemblages of tiny tube-dwelling marine polychaetes that reach population densities of 10^4 to 10^6 individuals per m². These animals feed at or near the sediment-water interface and physically stabilize or bind the sediment surface by producing a mucous "glue" that they use to build their tubes. Sometimes deposited dredged material

layers contain Stage 1 tubes still attached to mud clasts from their location of origin; these transported individuals are considered as part of the *in situ* fauna in our assignment of successional stages.

If there are no repeated disturbances to the newly colonized area, then these initial tube-dwelling suspension or surface-deposit feeding taxa are followed by burrowing, head-down deposit-feeders that rework the sediment deeper and deeper over time and mix oxygen from the overlying water into the sediment. The animals in these later-appearing communities (Stage 2 or 3) are larger, have lower overall population densities (10 to 100 individuals per m^2), and can rework the sediments to depths of 3 to 20 cm or more. These animals "loosen" the sedimentary fabric, increase the water content in the sediment, thereby lowering the sediment shear strength, and actively recycle nutrients because of the high exchange rate with the overlying waters resulting from their burrowing and feeding activities.

In dynamic estuarine and coastal environments, it is simplistic to assume that benthic communities always progress completely and sequentially through all four stages in accordance with the idealized conceptual model depicted in Figure 3. Various combinations of these basic successional stages are possible. For example, secondary succession can occur (Horn, 1974) in response to additional labile carbon input to surface sediments, with surface-dwelling Stage 1 or 2 organisms co-existing at the same time and place with Stage 3, resulting in the assignment of a "Stage 1 on 3" or "Stage 2 on 3" designation.

While the successional dynamics of invertebrate communities in fine-grained sediments have been well-documented, the successional dynamics of invertebrate communities in sand and coarser sediments are not well-known. Subsequently, the insights gained from sediment profile imaging technology regarding biological community structure and dynamics in sandy and coarse-grained bottoms are fairly limited.

2.1.5 Biological Mixing Depth

During the past two decades, there has been a considerable emphasis on studying the effects of bioturbation on sediment geotechnical properties as well as sediment diagenesis (Ekman et al., 1981; Nowell et al., 1981; Rhoads and Boyer, 1982; Grant et al., 1982; Boudreau, 1986; 1994; 1998). However, an increasing focus of research is centering on the rates of contaminant flux in sediments (Reible and Thibodeaux, 1999; François et al., 2002; Gilbert et al., 2003), and the two parameters that affect the time rate of contaminant flux the greatest are erosion and bioturbation (Reible and Thibodeaux, 1999). The depth to which sediments are bioturbated, or the biological mixing depth, can be an important parameter for studying either nutrient or contaminant flux in sediments. While the apparent RPD is one potential measure of biological mixing depth, it is quite common in profile images to see evidence of biological activity (burrows, voids, or actual animals)

well below the mean apparent RPD. Both the minimum and maximum linear distance from the sediment surface to both the shallowest and deepest feature of biological activity can be measured along with a notation of the type of biogenic structure measured. For this report, the maximum depth to which any biological activity was noted was measured and mapped.

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3.0 RESULTS

While replicate images were taken at each station, the amount of disturbance caused by the diver-deployed system did not allow for reliable measurements of precision between the two replicate images, so only one replicate (the least disturbed) from each station sampled by divers was analyzed. The amount of debris in and around the piers coupled with the high density of shell fragments also created high variation in the penetration depth at the frame deployed stations, with cross-sectional sedimentary structures masked or destroyed by debris (natural or anthropogenic) being dragged down by the prism cutting blade. While a copy of all images collected was provided to the client, given the variation in image feature preservation (regardless of whether they were taken with the frame-deployed or diver-deployed system), and because this variation in cross-sectional structural appearance was not really indicative of natural variance in the measured parameters, the best image (least disturbed) from each station was analyzed. A complete set of all the summary data measured from each image is presented in Appendix A.

The results for some SPI parameters are sometimes indicated in the data appendix or on the maps as being “Indeterminate” (Ind). This is a result of the sediments being either: 1) too compact for the profile camera to penetrate adequately, preventing observation of surface or subsurface sediment features, 2) too soft to bear the weight of the camera, resulting in over-penetration to the point where the sediment/water interface was above the window (imaging area) on the camera prism (the sediment/water interface must be visible to measure most of the key SPI parameters like aRPD depth, penetration depth, and infaunal successional stage), or 3) the biogenic and sedimentary stratigraphic structure was compromised or destroyed by sampling artifacts caused by the divers inserting the prism into the sediment (either vibrating or wiggling the camera to achieve greater penetration, which allowed suspended sediment to collect in between the cross-sectional profile and the faceplate of the prism)

SPI has been shown to be a powerful reconnaissance tool that can efficiently map gradients in sediment type, biological communities, or disturbances from physical forces or organic enrichment. The results and conclusions in this report are about dynamic processes that have been deduced from imaged structures; as such, they should be considered hypotheses available for further testing/confirmation. By employing Occam’s Razor, we feel reasonably assured that the most parsimonious explanation is usually the one borne out by subsequent data confirmation

3.1 PRISM PENETRATION DEPTH

Sediments throughout the site ranged from sandy silt to muds with minor fractions of very fine to fine sand with high percentages of shell hash (stations under Pier 7; see Figure 6) to pebble and cobble armoring over silty sands (Figure 7). As noted from the results of the survey done last year in October right after the capping operation, the addition of the AquaGate amendment also provided some surface armoring at select stations which impeded camera prism penetration. There was a noticeable decrease in prism penetration depth at the stations along the western edge of the pier compared with the results from last year; the cobble/shell armoring (Figure 7) appears to have been deposited at some point in the last 12 months and extends in a linear fashion from Station 1-3 south to Station 4-3 (Figure 8). The mean prism penetration depth in the study area ranged from 1.6 to 20.4 cm, with an overall site average of 12.1 cm; the spatial distribution of mean penetration depth at all stations sampled is shown in Figure 9.

3.2 THICKNESS OF REACTIVE AMENDMENT LAYER

Measureable deposits of AquaGate+PAC™ could be seen at 16 stations, while 5 stations showed only traces of the AquaGate particles in the upper oxidized layer of sediment (Figure 10). At those stations where the cap material could be detected, the mean thickness ranged from trace layers to 18.3 cm, with an average thickness of 8.0 cm at those 16 stations where a distinct layer could be measured. The footprint of the cap is shown in Figure 11.

3.3 APPARENT REDOX POTENTIAL DISCONTINUITY DEPTH

The distribution of mean apparent RPD depths is shown in Figure 12; mean aRPD depths could not be measured at 7 of the stations sampled by divers because of sampling artifacts that caused distortions to the sediment profile and eliminated the possibility of any accurate measurements; cobble/shell at two of the stations (Stations 1-3 and 3-3) prevented sufficient prism penetration to get an aRPD measurement. While eight of the stations still had no detectable aRPD present, the remaining stations had values ranging from 0.1 to 4.5 cm (Figure 12; Appendix A), with an overall site average of 1.4 cm.

3.4 INFAUNAL SUCCESSIONAL STAGE

The mapped distribution of infaunal successional stages is shown in Figure 13; while there was a noticeable improvement in biological community status under the pier compared to the post capping survey last year, there was a retrograde in successional status at some of the stations outboard of the pier (Stations 1-5, 1-6, 2-4, 2-6, 3-4, and 3-

6). However, presence of Stage 3 taxa (larger infaunal deposit feeders) was evident at 18 of the 50 stations.

3.5 MAXIMUM BIOLOGICAL MIXING DEPTH

The spatial distribution of the maximum depth to which any biological activity was seen in the study area is shown in Figure 14. Some of the deepest infaunal burrowing was found at those stations under the pier where the reactive amendment had been placed; maximum depth of biogenic activity ranged from 0.9 to 18.7 cm, with an overall site average of 10.2 cm.

4.0 DISCUSSION

There were some substantial change to seafloor conditions compared with those from last October (Germano & Associates 2013). While the appearance of the cobble armoring layer (Figures 7-8) just to the western outboard edge of Pier 7 was somewhat unexpected, it was particularly gratifying to obtain visual evidence of the reactive amendment being re-worked into the bottom sediments by bioturbation as originally planned (Figure 15). Another unexpected result was the apparent small-scale heterogeneity in some of the mapped patterns of reactive amendment from 2012 (Figure 1) to 2013 (Figure 11). There were some locations where the layer that was obvious in 2012 was no longer visible in 2013 (Figure 16), and conversely where there was no detectable layer in 2012 appeared to be present in 2013 (Figure 17).

The results from this survey showed that activated cap amendment is definitely being reworked into the sediments by the resident infauna; over time, the re-appearance of Stage 3 taxa as well as thicker oxidized surface (aRPD) layers should be more widespread (depending on the frequency of physical disturbance to the bottom from propwash and ship traffic activity)

There was also a noticeable improvement in the image quality from locations sampled with the hand-held camera; the PSNS & IMF Bremerton site divers have definitely improved their technique with the experience gained from the first two efforts. We would like to acknowledge both their attention to safety and skill in sample collection; it is truly a pleasure to collaborate with them and the rest of the PSNS & IMF Bremerton site personnel on this project.

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FIGURES

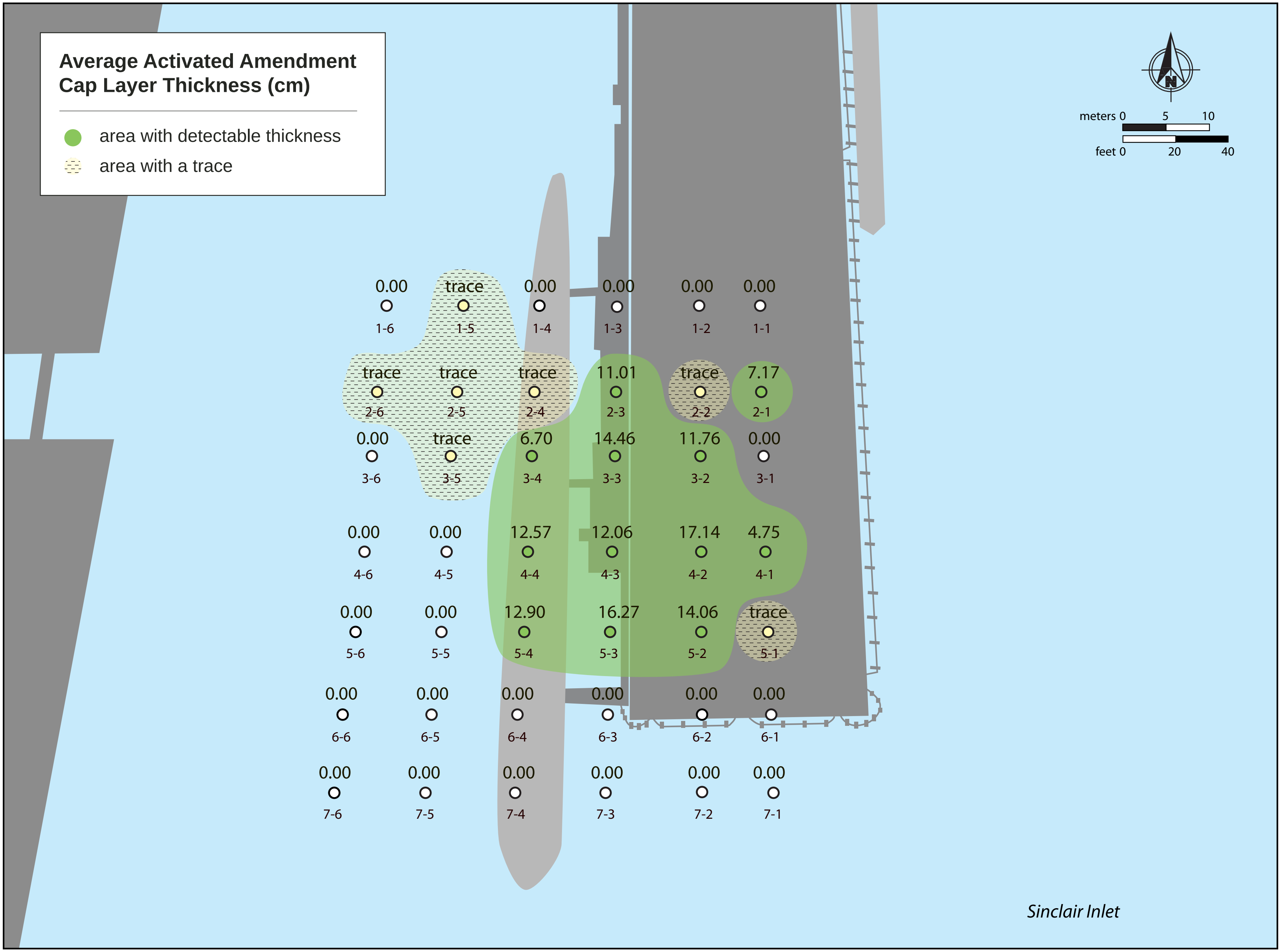


Figure 1: Spatial distribution and average depositional thickness (cm) of the AquaGate +PACTM material placed at locations in and around Pier 7 at the PSNS & IMF Bremerton site in October, 2012.

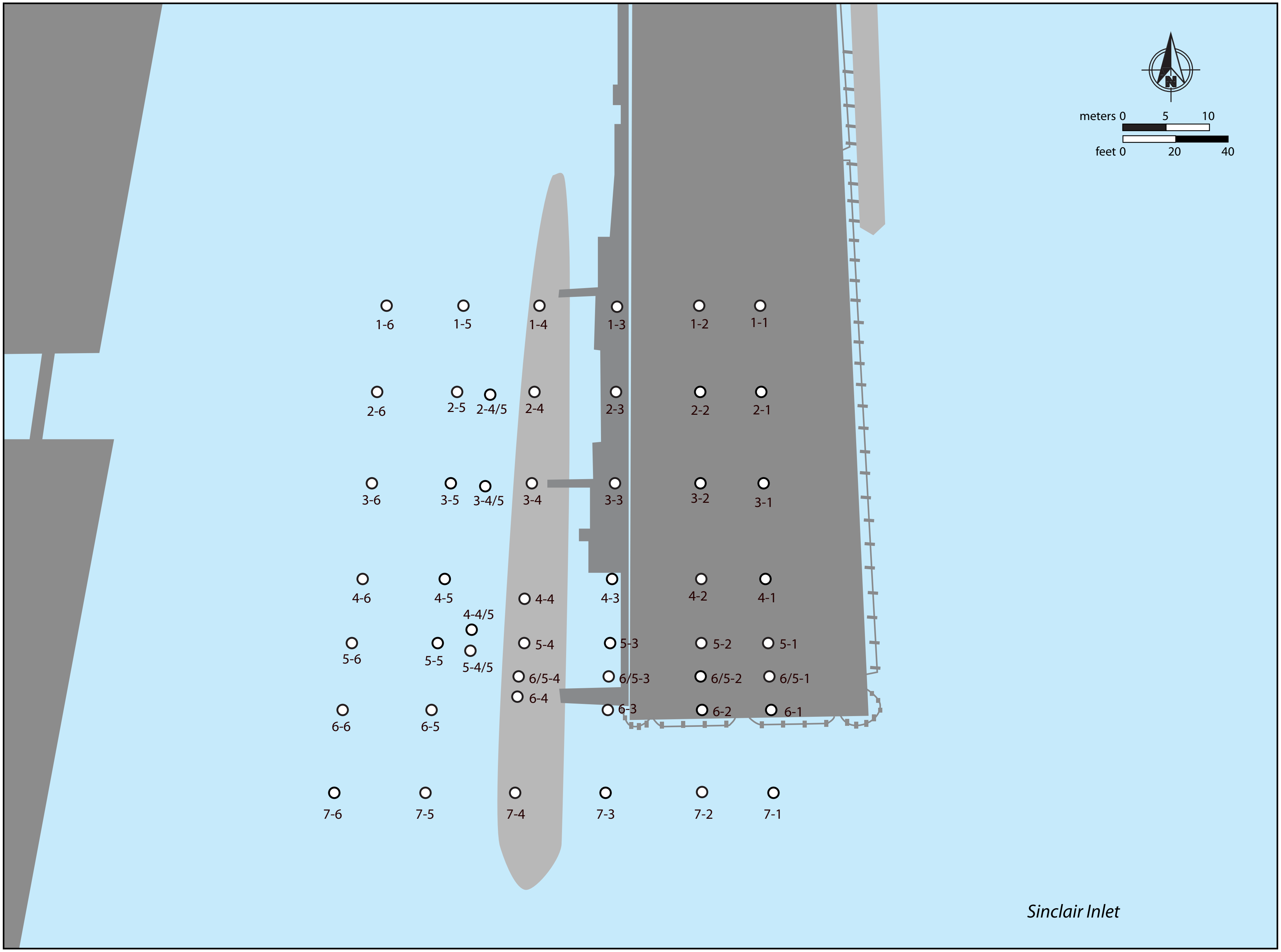


Figure 2: Location of SPI stations sampled under and around Pier 7 at PSNS & IMF, Bremerton site in August 2013.

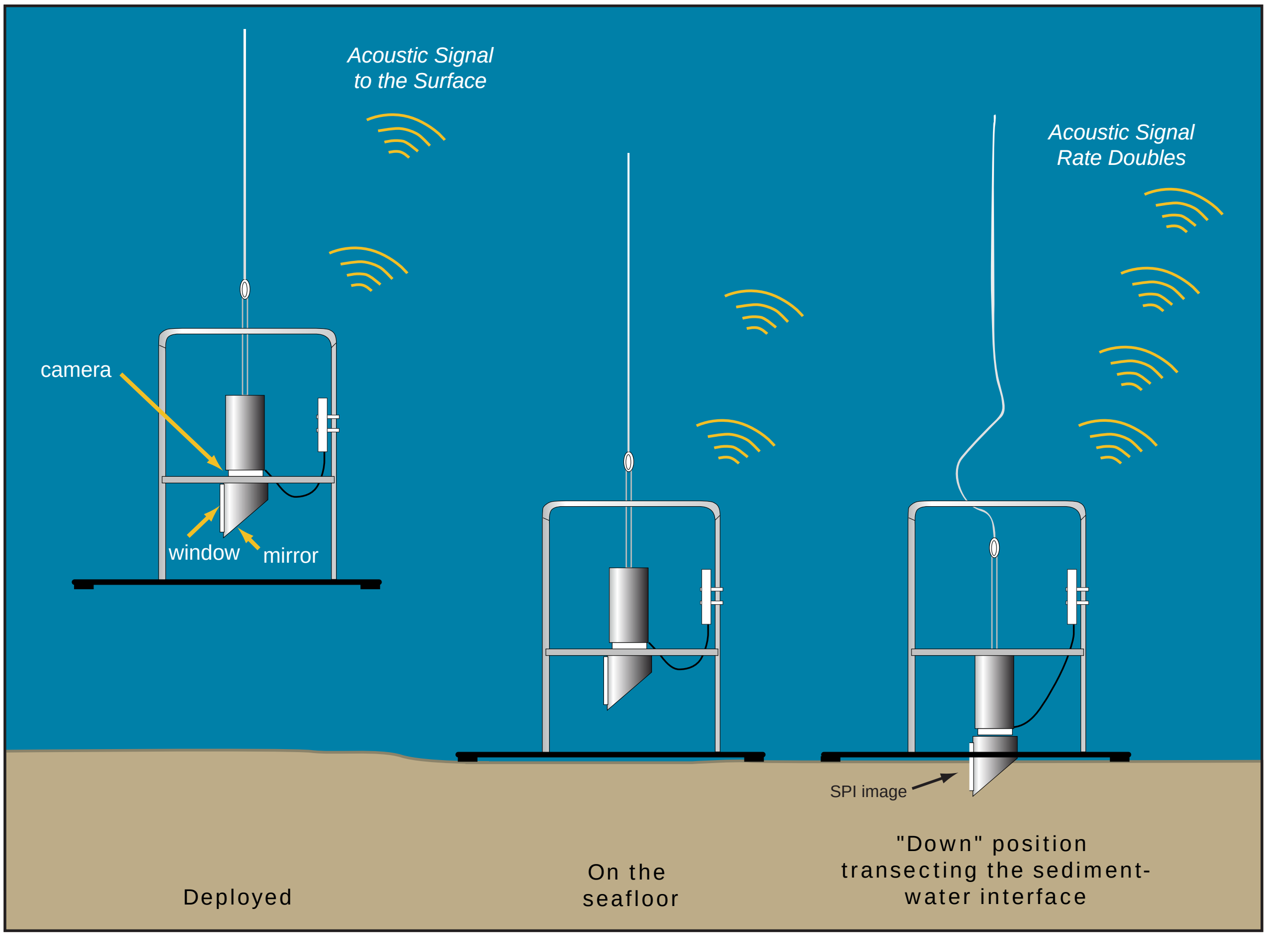


Figure 3: Deployment and operation of the SPI camera system.

Figure 4: The hand-held SPI system used by divers for all stations that were located underneath Pier 7 at PSNS & IMF, Bremerton site.

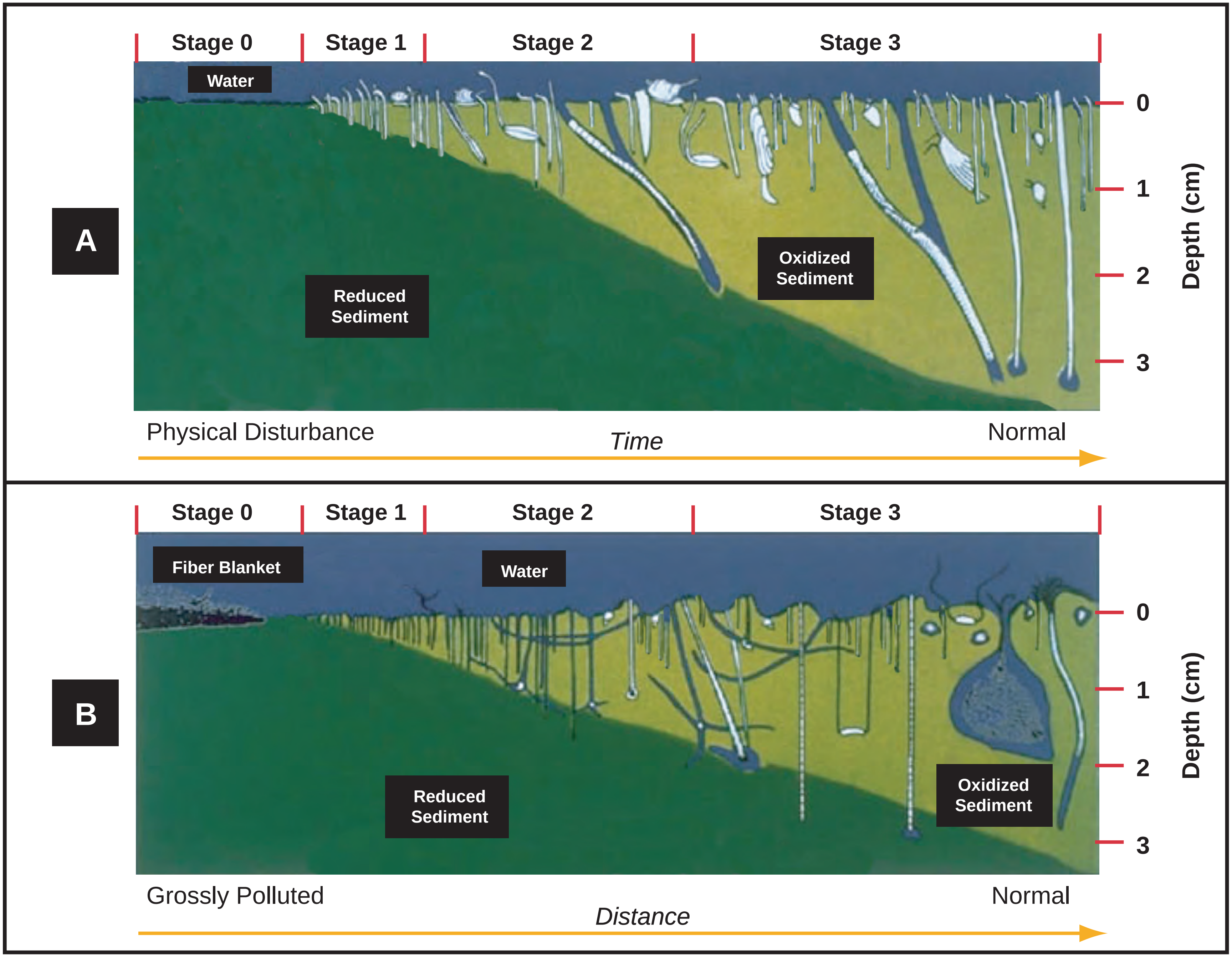
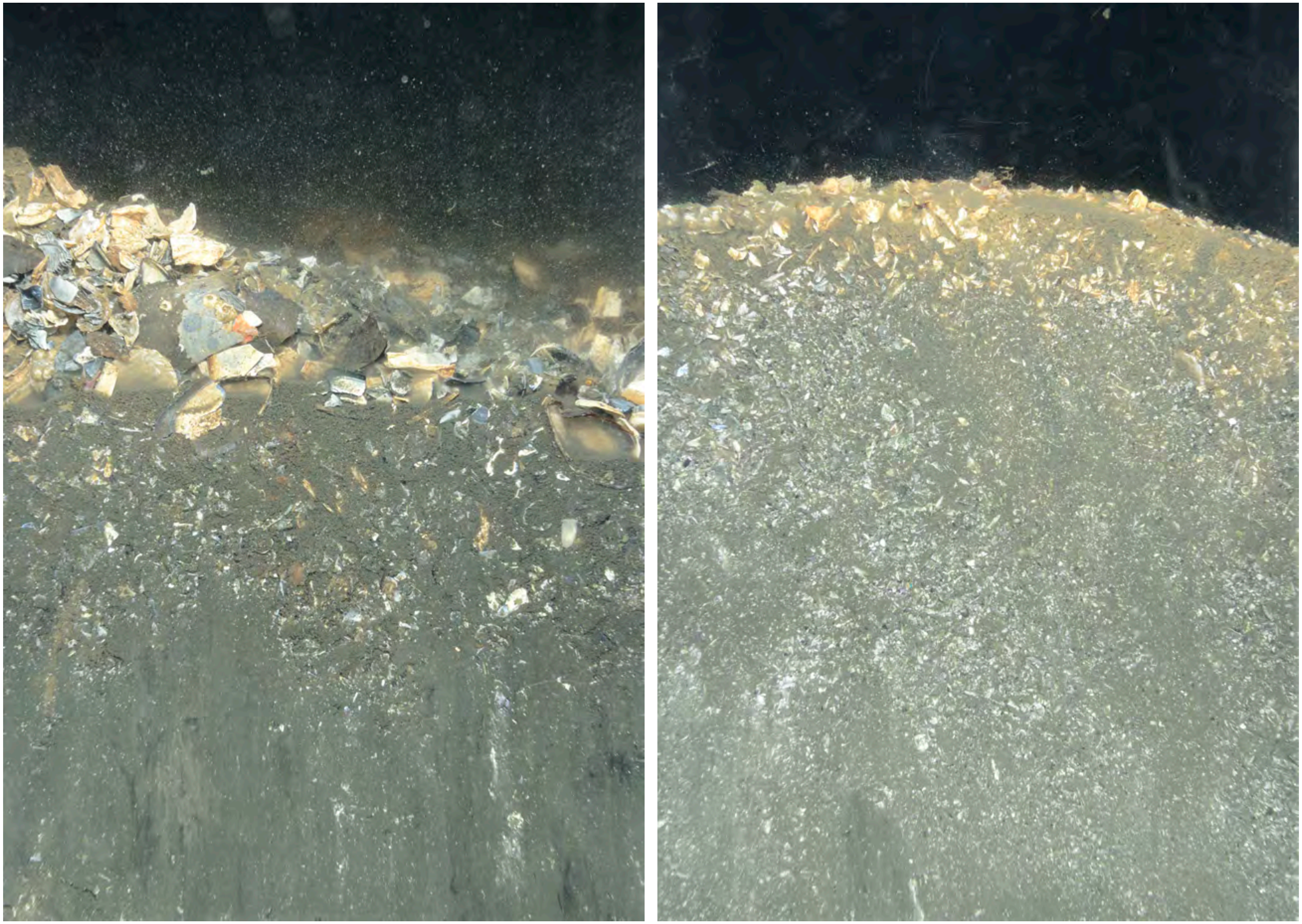
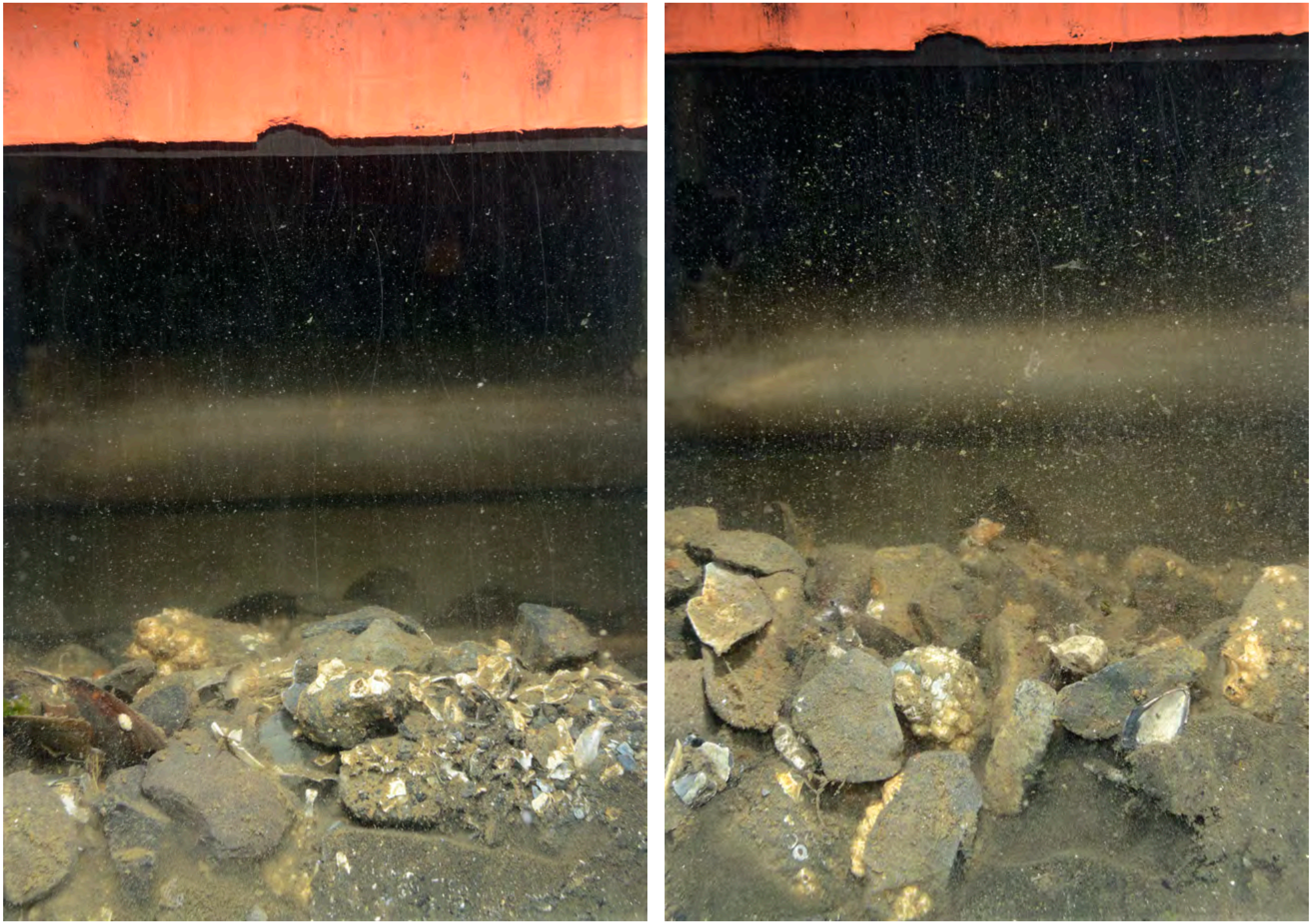


Figure 5: The stages of infaunal succession as a response of soft-bottom benthic communities to physical disturbance (top panel) or organic enrichment (bottom panel). From Rhoads and Germano, 1982.



01-1 **06-1**

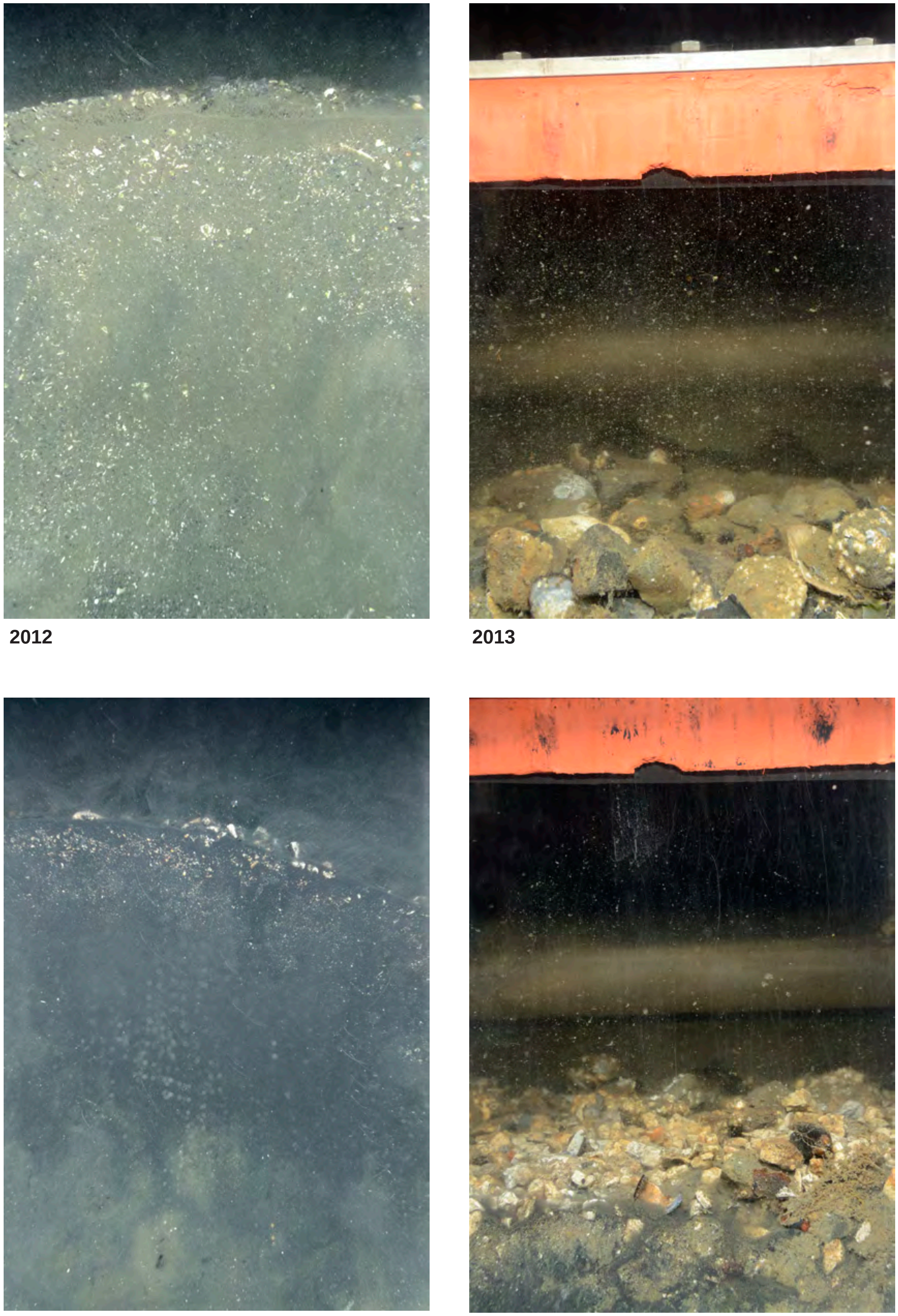
Figure 6: These profile images taken with the hand-held camera under the pier from Station 01-1 (left) and Station 06-1 (right) show the unusually high percentage of shell fragments mixed in with the silt-clay sediments; the high shell content was typical for the majority of stations under Pier 7. Scale: width of each profile image = 14.6 cm.



1-3 3-3

Figure 7: These profile images from Stations 1-3 (left) and 3-3 (right) show a shell and cobble armoring layer over the ambient fine sediments. Scale: width of each profile image = 14.6 cm.

1-3



2012 2013

4-3

2012 2013

Figure 8: These profile images from the same stations taken in 2012 and 2013 show the radical change in sediment type because of the appearance of the surface armoring of cobble and shell; compare the differences in images from Station 1-3 (top) and 4-3 (bottom). Scale: width of each profile image = 14.6 cm.

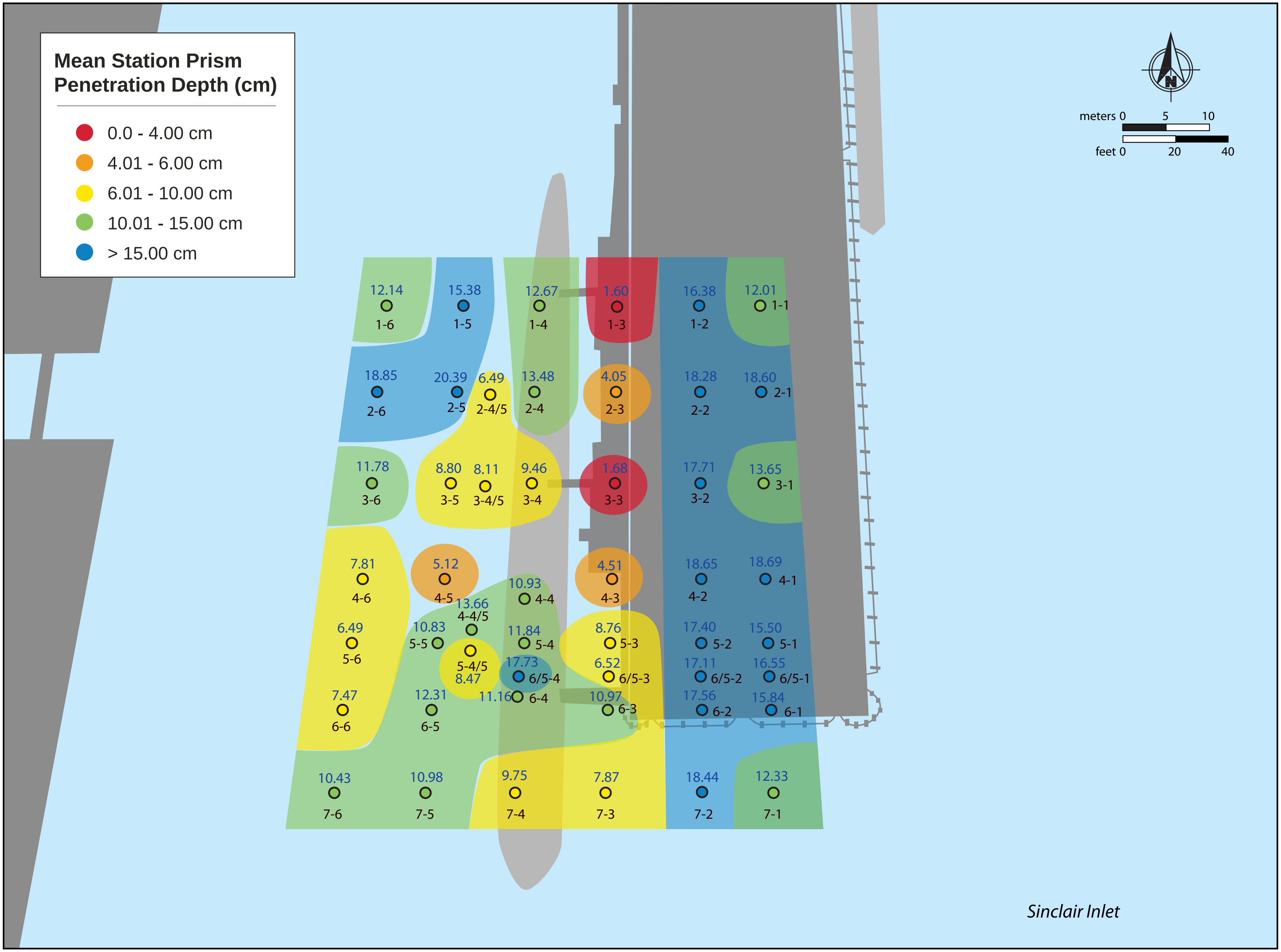


Figure 9: Spatial distribution of mean camera prism penetration depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in August, 2013.

Figure 10: This profile image from Station 5-3 shows a distinct layer of the white pebbles that were coated with the reactive amendment and used as a carrier to get the material to the bottom sediments; particles of activated carbon are still visible in the subsurface profile. Scale: width of profile image = 14.6 cm.

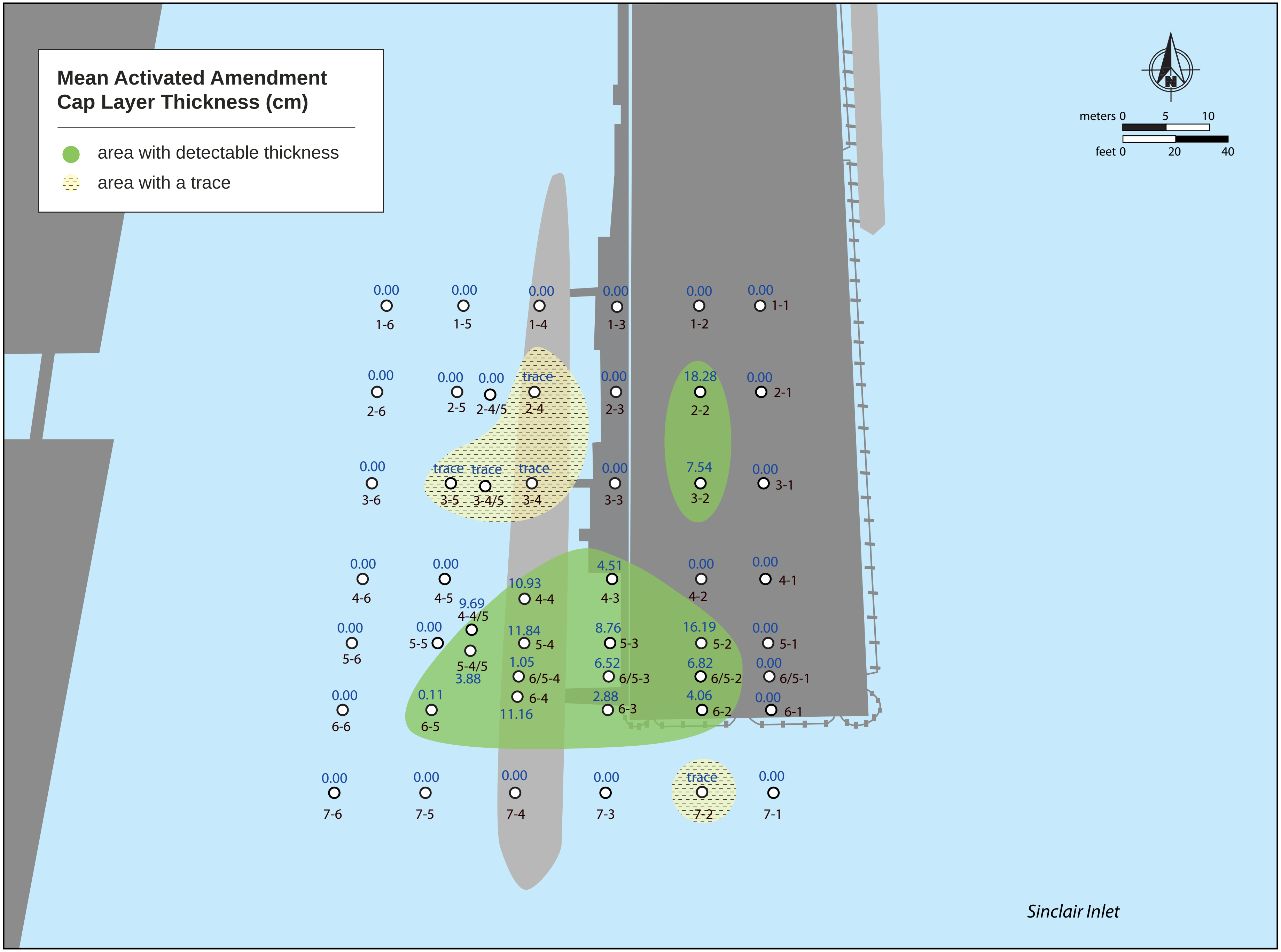


Figure 11: Spatial distribution and mean depositional thickness (cm) of the AquaGate +PACTM material placed at locations in and around Pier 7 at the PSNS & IMF Bremerton site.

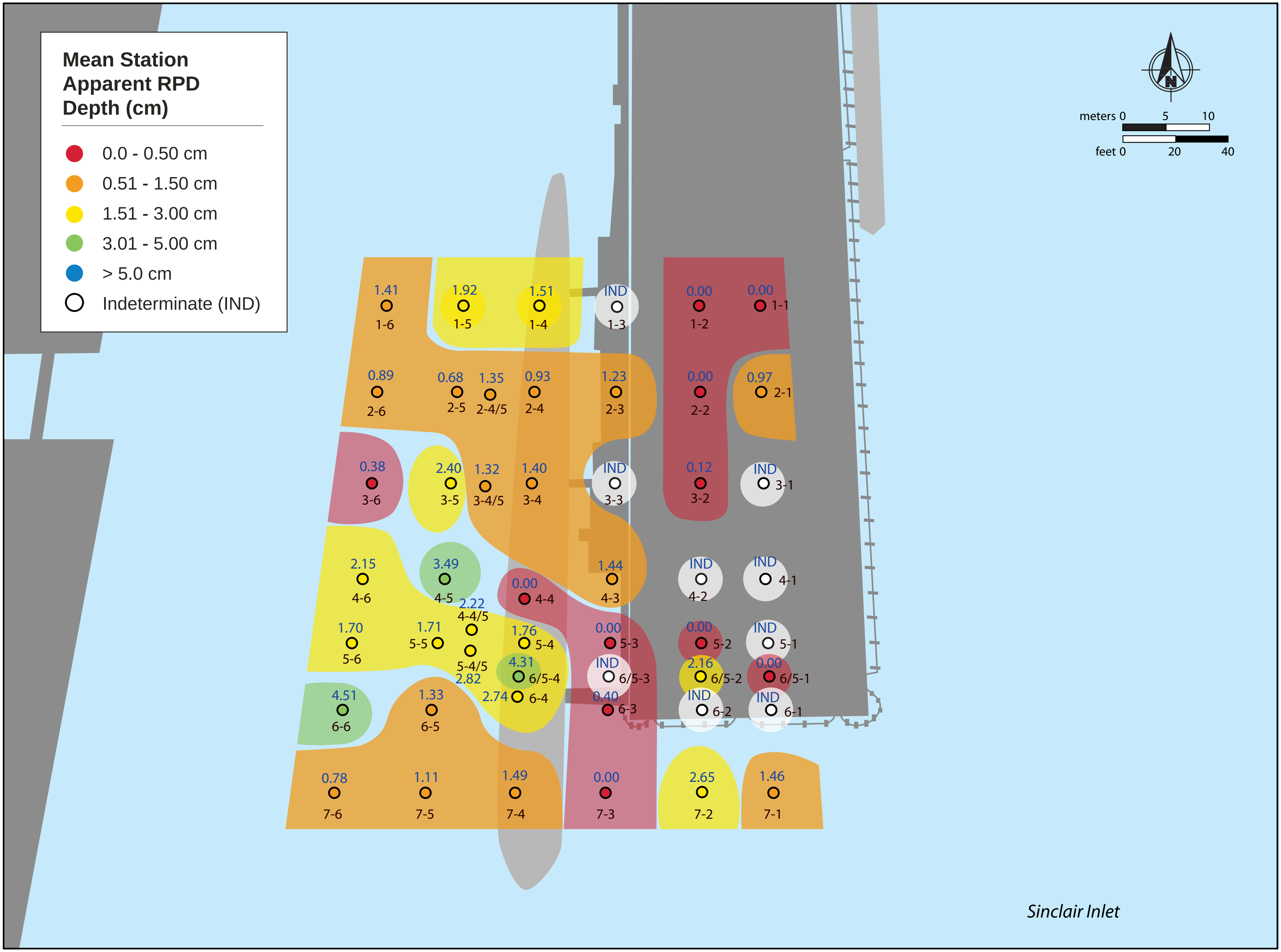


Figure 12: Spatial distribution of mean apparent RPD depth (cm) at Pier 7 in August, 2013.

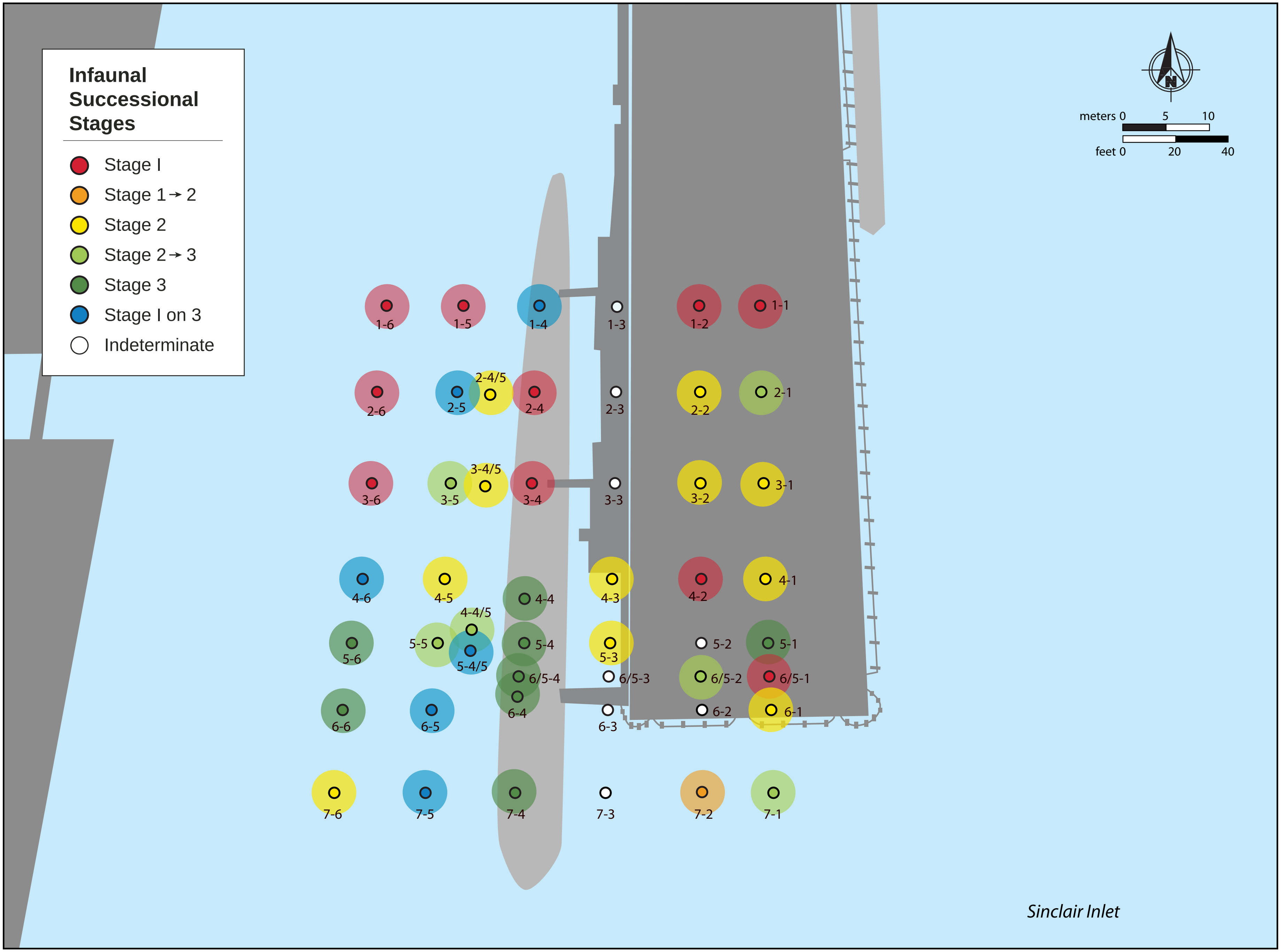


Figure 13: Spatial distribution of infaunal successional stages at Pier 7 in August, 2013.

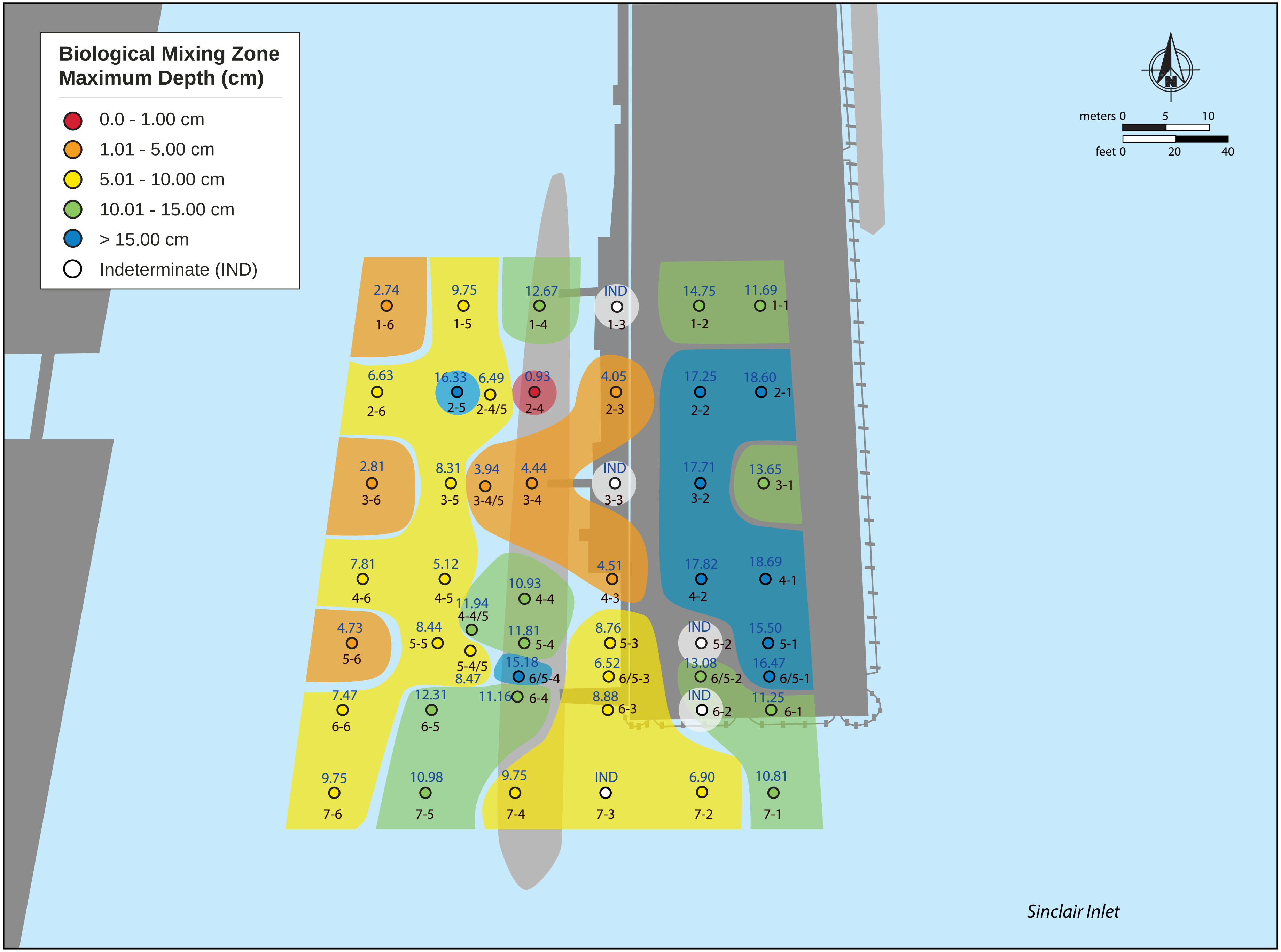


Figure 14: Spatial distribution of maximum biological mixing depth at Pier 7 at the PSNS & IMF Bremerton site in August, 2013.

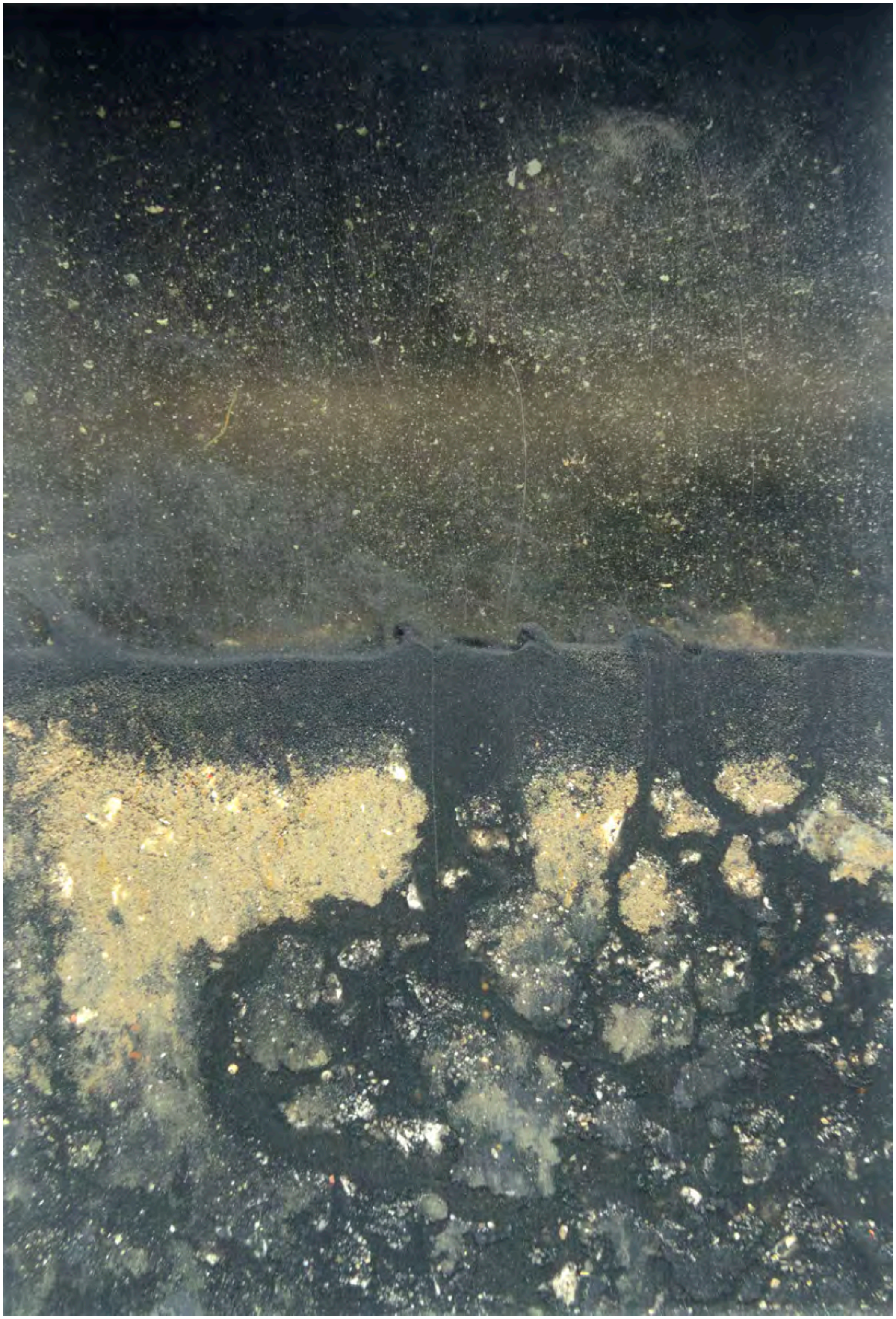


Figure 15: This profile image from Station 4-4 shows active particle transport of the activated carbon particles as well as the development of a surface oxidized layer. Scale: width of profile image = 14.6 cm.

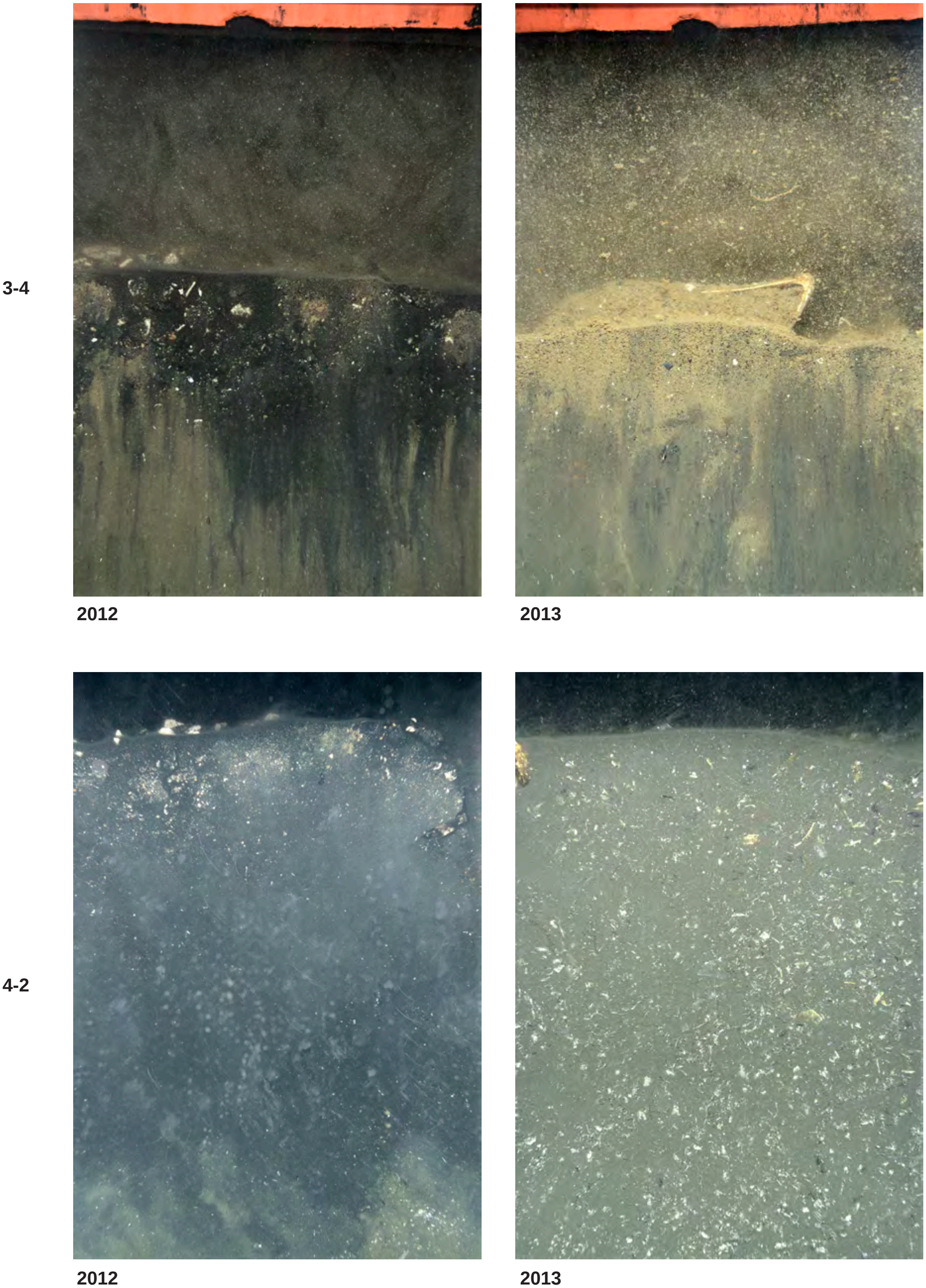


Figure 16: These profile images from Stations 3-4 (top) and 4-2 (bottom) show an obvious presence of the reactive amendment in 2012 that seems to no longer be present in 2013. Scale: width of each image = 14.6 cm.

2012 **2013**

Figure 17: These profile images from 2012 and 2013 at Station 6-4 show the small-scale heterogeneity in the spatial distribution of the reactive amendment added in Oct 2012. Scale: width of each image = 14.6 cm.

APPENDIX A

Sediment Profile Image Analysis Results

STATION	Frame or HandHeld	Stops	Weights	REP	DATE	TIME	Calibration Constant	Penetration Area (sq.cm)	Average Penetration (cm)	GAC Layer Area (sq.cm)	Mean GAC Layer depth (cm)	RPD Area (sq.cm)	Mean RPD (cm)	Mixing Zone Max Depth (cm)	Successional Stage
1-1	H	-	-	a	8/13/2013	9:04:13	14.624	175.63	12.01	0.00	0.00	0.00	0.00	11.69	Stage 1
1-2	H	-	-	a	8/13/2013	9:06:06	14.624	239.59	16.38	0.00	0.00	0.00	0.00	14.75	Stage 1
1-3	F	15	4	A	8/13/2013	12:25:37	14.580	23.33	1.60	0.00	0.00	ind	ind	ind	indeterminate
1-4	F	17	4	D	8/14/2013	9:16:45	14.580	184.72	12.67	0.00	0.00	22.04	1.51	12.67	Stage 1 on 3
1-5	F	15	2	B	8/14/2013	9:21:54	14.580	224.17	15.38	0.00	0.00	28.04	1.92	9.75	Stage 1
1-6	F	15	2	B	8/14/2013	9:26:40	14.580	176.98	12.14	0.00	0.00	20.59	1.41	2.74	Stage 1
2-1	H	-	-	E	8/13/2013	9:33:08	14.624	272.01	18.60	0.00	0.00	14.24	0.97	18.60	Stage 2 ->3
2-2	H	-	-	A	8/13/2013	9:35:00	14.624	267.30	18.28	267.30	18.28	0.00	0.00	17.25	Stage 2
2-3	F	15	4	B	8/13/2013	12:20:39	14.580	59.00	4.05	0.00	0.00	17.93	1.23	4.05	indeterminate
2-4	F	15	2	B	8/14/2013	9:43:06	14.580	196.52	13.48	trace	trace	ind	0.93	0.93	Stage 1
2-4/5	F	15	2	A	8/14/2013	9:44:55	14.580	94.60	6.49	0.00	0.00	19.73	1.35	6.49	Stage 2
2-5	F	15	2	B	8/14/2013	9:49:49	14.580	297.27	20.39	0.00	0.00	9.92	0.68	16.33	Stage 1 on 3
2-6	F	15	2	A	8/14/2013	9:54:41	14.580	274.85	18.85	0.00	0.00	12.92	0.89	6.63	Stage 1
3-1	H	-	-	A	8/13/2013	9:57:33	14.624	199.55	13.65	0.00	0.00	ind	ind	13.65	Stage 2
3-2	H	-	-	A	8/13/2013	9:59:30	14.624	258.92	17.71	110.23	7.54	1.72	0.12	17.71	Stage 2
3-3	F	15	4	C	8/13/2013	12:15:56	14.580	24.50	1.68	0.00	0.00	ind	ind	ind	indeterminate
3-4	F	15	2	B	8/14/2013	10:17:55	14.580	137.91	9.46	trace	trace	20.36	1.40	4.44	Stage 1
3-4/5	F	15	2	B	8/14/2013	10:21:03	14.580	118.28	8.11	trace	trace	19.19	1.32	3.94	Stage 2
3-5	F	15	2	B	8/14/2013	10:24:35	14.580	128.35	8.80	trace	trace	34.95	2.40	8.31	Stage 2 ->3
3-6	F	15	2	B	8/14/2013	10:28:22	14.580	171.75	11.78	0.00	0.00	5.58	0.38	2.81	Stage 1
4-1	H	-	-	A	8/13/2013	10:03:12	14.624	273.35	18.69	0.00	0.00	ind	ind	18.69	Stage 2
4-2	H	-	-	A	8/13/2013	10:04:55	14.624	272.77	18.65	0.00	0.00	ind	ind	17.82	Stage 1
4-3	F	15	4	B	8/13/2013	12:03:31	14.580	65.78	4.51	-	4.51	ind	1.44	4.51	Stage 2
4-4	F	15	2	A	8/14/2013	10:40:01	14.580	159.38	10.93	-	10.93	0.00	0.00	10.93	Stage 3
4-4/5	F	15	2	A	8/14/2013	10:48:54	14.580	199.22	13.66	141.33	9.69	ind	2.22	11.94	Stage 2 ->3
4-5	F	15	2	B	8/14/2013	10:56:45	14.580	74.65	5.12	0.00	0.00	ind	3.49	5.12	Stage 2
4-6	F	15	2	B	8/14/2013	11:01:49	14.580	113.90	7.81	0.00	0.00	31.41	2.15	7.81	Stage 1 on 3
5-1	H	-	-	B	8/13/2013	10:08:19	14.624	226.71	15.50	0.00	0.00	ind	ind	15.50	Stage 3
5-2	H	-	-	B	8/13/2013	10:10:56	14.624	254.47	17.40	236.73	16.19	0.00	0.00	ind	indeterminate
5-3	F	15	4	B	8/13/2013	11:57:24	14.580	127.78	8.76	-	8.76	0.00	0.00	8.76	Stage 2
5-4	F	15	2	B	8/14/2013	10:45:39	14.580	172.70	11.84	-	11.84	ind	1.76	11.81	Stage 3
5-4/5	F	15	2	A	8/14/2013	10:52:38	14.580	123.47	8.47	56.57	3.88	41.11	2.82	8.47	Stage 1 on 3
5-5	F	15	2	B	8/14/2013	11:11:50	14.580	157.90	10.83	0.00	0.00	24.98	1.71	8.44	Stage 2 ->3
5-6	F	15	2	B	8/14/2013	11:06:22	14.580	94.68	6.49	0.00	0.00	24.79	1.70	4.73	Stage 3

STATION	Frame or HandHeld	Stops	Weights	REP	DATE	TIME	Calibration Constant	Penetration Area (sq.cm)	Average Penetration (cm)	GAC Layer Area (sq.cm)	Mean GAC Layer depth (cm)	RPD Area (sq.cm)	Mean RPD (cm)	Mixing Zone Max Depth (cm)	Successional Stage
6-1	H	-	-	B	8/13/2013	10:45:09	14.624	231.68	15.84	0.00	0.00	ind	ind	11.25	Stage 2
6-2	H	-	-	A	8/13/2013	10:46:33	14.624	256.82	17.56	59.41	4.06	ind	ind	ind	indeterminate
6-3	H	-	-	B	8/13/2013	11:11:03	14.624	160.44	10.97	42.16	2.88	5.89	0.40	8.88	indeterminate
6-4	F	15	3	A	8/14/2013	11:37:37	14.580	162.74	11.16	-	11.16	ind	2.74	11.16	Stage 3
6-5	F	15	3	B	8/14/2013	12:01:07	14.580	179.55	12.31	1.64	0.11	19.35	1.33	12.31	Stage 1 on 3
6-6	F	15	3	C	8/14/2013	12:12:54	14.580	108.89	7.47	0.00	0.00	65.73	4.51	7.47	Stage 3
6/5-1	H	-	-	A	8/13/2013	10:13:00	14.624	242.05	16.55	0.00	0.00	0.00	0.00	16.47	Stage 1
6/5-2	H	-	-	B	8/13/2013	10:14:58	14.624	250.19	17.11	99.74	6.82	ind	2.16	13.08	Stage 2 ->3
6/5-3	F	15	4	B	8/13/2013	11:51:00	14.580	95.04	6.52	95.04	6.52	ind	ind	6.52	indeterminate
6/5-4	F	15	3	B	8/14/2013	11:49:20	14.580	258.55	17.73	15.38	1.05	62.82	4.31	15.18	Stage 3
7-1	H	-	-	B	8/13/2013	10:52:04	14.624	180.31	12.33	0.00	0.00	21.42	1.46	10.81	Stage 2 ->3
7-2	H	-	-	B	8/13/2013	10:55:17	14.624	269.68	18.44	trace	trace	38.76	2.65	6.90	Stage 1 -> 2
7-3	H	-	-	B	8/13/2013	11:08:36	14.624	115.06	7.87	0.00	0.00	0.00	0.00	ind	indeterminate
7-4	F	15	3	A	8/14/2013	11:55:00	14.580	142.15	9.75	0.00	0.00	21.70	1.49	9.75	Stage 3
7-5	F	15	3	A	8/14/2013	12:03:03	14.580	160.02	10.98	0.00	0.00	16.15	1.11	10.98	Stage 1 on 3
7-6	F	15	3	A	8/14/2013	12:07:50	14.580	152.04	10.43	0.00	0.00	11.42	0.78	9.75	Stage 2

STATION	Frame or HandHeld	Stops	Weights	REP	COMMENT
1-1	H	-	-	a	polychaetes
1-2	H	-	-	a	Silty sed; no GAC; shells (mussels) and shell fragments on surface at below SWI throughout depth; no clear aRPD; small polychaetes visible at depth
1-3	F	15	4	A	Silty sand, no GAC; surface covered with large pebbles/rocks and shell fragments, penetration too shallow to determine bio mixing or stage
1-4	F	17	4	D	Silty sed; no GAC; debris in background, fecal pellet layer at SWI; patchy aRPD, evidence of burrowing at depth.
1-5	F	15	2	B	Silty sed; no GAC; small to medium mud clasts (camera base sled artifact) on surface; finer grains at SWI; patchy, thin aRPD
1-6	F	15	2	B	Silty sed; no GAC; homogeneous texture with little reworking at depth
2-1	H	-	-	E	Silty sand; no GAC; several large shell halves at surface, smaller shell frag throughout depth; bit of algal below depth; layer of fine sed particles on surface; discontinuous patchy aRPD; evidence of burrowing, infauna visible on right and burrowing to depth of profile (worm at lower left corner)
2-2	H	-	-	A	GAC incorporated throughout depth, thicker/darker near SWI; shell fragments and white pebbles on surface; shell frag and debris incorporated in upper ~6-8cm; clear small burrows at depth and to right of center
2-3	F	15	4	B	Silty sed; no GAC; penetration depth too shallow to determine successional stage; mussel shells, shell fragments, fecal pellets and debris on surface.
2-4	F	15	2	B	Silty sed; trace GAC on white pebbles in dragged down/collapsed section on right; few bits of debris and crab carapace on surface; large bivalve shell dragged down in collapsed section on right; thin aRPD; some fecal pellets at SWI
2-4/5	F	15	2	A	Silty very fine sand; no GAC; some fecal pellets on surface; evidence of burrowing at depth
2-5	F	15	2	B	Silty sed; no GAC; thin layer of fine reduced sed at SWI; patchy aRPD; void at ~5 cm, evidence of burrow opening at 16 cm
2-6	F	15	2	A	Silty sed; no GAC; bits of organic debris on surface; very homogeneous texture
3-1	H	-	-	A	Silty sand, no GAC; few shell fragments on surface, cable/cord on surface (from divers); finer grains at surface; aRPD hidden by profile disturbance during prism insertion; v. small shell frag and debris throughout depth; small burrows throughout depth of profile
3-2	H	-	-	A	Silty sed; GAC mixed with sediment grains in upper 2 cm, GAC visible through much of profile (partly due to sampling artifact) ; shell fragments and white pebbles on surface; aRPD is patchy, burrowing evident through depth of profile
3-3	F	15	4	C	Cobble bottom over silty sand, no GAC; surface covered with barnacle-encrusted cobble and a few shells, v. shallow penetration
3-4	F	15	2	B	Silty sed; no GAC; signs of burrowing in aRPD; large shell on surface
3-4/5	F	15	2	B	Silty sed, coarser grains near SWI; possible GAC traces at depth; some fecal pellets at surface.
3-5	F	15	2	B	Silty sed; bit of trace GAC on right at depth; coarser grains and fecal pellets at SWI; polychaete at 4.5 cm on right
3-6	F	15	2	B	Silty sand; no GAC; small burrow on left at 2.81cm
4-1	H	-	-	A	Silty sand, no GAC; shell frag and debris on surface and incorporated throughout depth; no clear aRPD; large Sabellid tube gainst faceplate at SWI; small burrow at 10 cm between center and right edge of image as well as small burrows evident at base of profile
4-2	H	-	-	A	Silty sand; no GAC; somewhat finer grains at SWI; shell against faceplate at far left; few bits of debris at surface; shell fragments incorporated densely through depth; small burrows evident throughout profile
4-3	F	15	4	B	Silty sed; coarser grains near surface at right; GAC incorporated with sediment through depth; white pebbles and a few large shells on surface, evidence of burrowing throughout profile; Stage 3 taxa likely present but in very low density
4-4	F	15	2	A	Very fine sandy silt with layer of very fine GAC in upper 1-2cm, followed by ~1-2 cm of oxidized sed with GAC pebbles visible, with 'channels' of GAC through; GAC incorporated with sed through depth from bioturbation; classic photo.
4-4/5	F	15	2	A	Very fine sandy silt with GAC fine carbon particles at surface; GAC throughout depth, thin layer ~1-2cm at SWI, followed by patches of oxidized sediment; then GAC incorporated with sediment as seen by darker stratum mid-profile depth
4-5	F	15	2	B	Silty fine sand; no substantial GAC; shallow penetration; aRPD extends below pen depth; few coarser GAC carrier pebbles on surface in background
4-6	F	15	2	B	Silty sed; no GAC; pit from SWI to ~3cm on right; few pebbles and one large rock on surface; white pebbles on surface in background
5-1	H	-	-	B	Silty sand; no GAC; fine grains at surface; large shell fragments and debris at surface, including what may be former sabellid tube; shell frag incorporated throughout depth; tube of a kind (possibily maldanid tube) extending into sed ~6cm, just to left of center; thin burrows at ~5 and ~10 cm
5-2	H	-	-	B	Silt sed; GAC layer thicker/darker in upper few cm, present almost to base of profile and incorporated at depth (possibly due to sampling artifact); some white pebbles and bits of shell frag at surface and throughout depth; profile too disturbed by samplling to determine successional stage or mixing depth; clear tubing on surface (from divers)
5-3	F	15	4	B	Silty sed; GAC throughout depth, mixed with some coarser grains throughout; surface covered with white GAC carrier pebbles, burrowing throughout depth of profile
5-4	F	15	2	B	Silty sed; GAC throughout depth; few white GAC carrier pebbles and shell fragments on surface; thin layer of GAC at surface; aRPD estimated by linear measurement; GAC incorporated with sed throughout rest of depth; void on left just below SWI
5-4/5	F	15	2	A	Silty sed; few white GAC carrier pebbles on surface; GAC throughout depth, fine layer of activated carbon at SWI from biogenic mounding, incorporated throughout depth below aRPD layer; signs of burrowing throughout profile
5-5	F	15	2	B	Silty sand; no GAC; large shell on surface; fecal pellets at SWI; low density of subsurface burrowing
5-6	F	15	2	B	Silty sand; no GAC; uneven surface; coarser grains near surface; organic debris on surface and in suspension; two small voids to right of center

STATION	Frame or HandHeld	Stops	Weights	REP	COMMENT
6-1	H	-	-	B	Silty sand; no GAC; high density of shell fragments on surface; thin 0.5cm layer of fecal pellets, at SWI, followed by 6+cm of dense shell fragments; worm visible at depth against faceplate
6-2	H	-	-	A	Silty sed; GAC on surface with the finer carbon particles smeared down through profile by sampling artifact; many parameters impossible to measure because of disturbance by divers inserting prism. Many small shell frag incorporated in upper 9 cm
6-3	H	-	-	B	Silty sed; GAC pebbles aggregated on surface with shell fragments; profile too disturbed to determine successional stage accurately
6-4	F	15	3	A	Silty sed; GAC throughout depth; very fine GAC particles in upper cms; few small white GAC carrier pebbles in upper cms; burrowing throughout profile, aRPD linear measurement
6-5	F	15	3	B	Silty sed, coarser grains near SWI; small patch of GAC near SWI on left; few tubes at surface; polychaetes at depth
6-6	F	15	3	C	Silty fine to medium sand, sand ripple near center; clear segmented polychaete tube above SWI on left; aRPD extends beyond depth on left; 3 small polychaetes against faceplate ~ 5-6 cm
6/5-1	H	-	-	A	Silty sand; no GAC, no aRPD; small burrows at depth, possible Stage 2 fauna is present but not distinct
6/5-2	H	-	-	B	Silty sed; GAC pebbles on surface with shell fragments, worm visible at depth on right; aRPD determined by linear measurement, top layer disturbed by prism movement
6/5-3	F	15	4	B	Silty sed; GAC throughout depth, patches of aRPD below ~4cm layer of white pebbles, impossible to determine accurately due to profile disturbance from fine particles falling inbetween coarse GAC carrier pebbles & faceplate
6/5-4	F	15	3	B	Silty sed; GAC carrier pebble at depth (dragdown by prism); uneven surface; aRPD continues in dragdown, chaotic mix; algal debris on surface at left and in dragdown; small void or burrow opening at right ~9cm, evidence of burrow at left at 15cm
7-1	H	-	-	B	Silty sed; no GAC; shells and crab carapaces on surface; finer grain layer at surface; two retracted anemones at depth, subsurface burrows evident
7-2	H	-	-	B	Silty sand, coarser grains at surface; some shell fragments and GAC pebbles on surface; small polychaete (capatellid) just below aRPD on right
7-3	H	-	-	B	Silty sed, no GAC; surface completely covered with shell fragments with smaller shell fragments incorporated through depth
7-4	F	15	3	A	Silty sed; no GAC; uneven surface; fecal pellets at SWI; burrowing anemone at depth to 8.66cm
7-5	F	15	3	A	Silty sed, some coarser grains near SWI; no GAC; sabellid tube at far left and through sed; ~5 shrimp on surface
7-6	F	15	3	A	Silty sed; no GAC; few bits of small shell fragments and organic debris on surface; small polychaetes visible against faceplate just below aRPD in center

December 2014

Sediment Profile Imaging Report

Demonstration of *in-situ* Treatment of Contaminated Sediments with Reactive Amendments: Post-Cap Survey #3





Prepared for

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1700 Westlake Avenue North
Suite 200
Seattle, WA 98109-3856

Hart Crowser Job Number 1789702,
Work Order #2

Prepared by

Germano & Associates, Inc.
12100 SE 46th Place
Bellevue, WA 98006

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1.0
INTRODUCTION

As part of a multidisciplinary effort to investigate the feasibility of treating contaminated sediments in active Department of Defense (DoD) harbors, Germano & Associates, Inc. (G&A) performed a Sediment Profile Imaging (SPI) survey around Pier 7 at the Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF) Bremerton site. The purpose of this SPI survey was to continue to monitor recolonization and benthic habitat conditions at a total of 50 stations following placement of a reactive amendment cap placed on the sediment surface. This was the third and final post-cap monitoring survey performed as part of this multidisciplinary demonstration research project.

2.0 MATERIALS AND METHODS

Between October 14-16, 2012, 141 tons of AquaGate +PAC™ were placed in the target area for remediation under and around Pier 7 at PSNS & IMF Bremerton site (Johnston et al. 2013). An initial post-placement SPI survey was performed on October 30-31, 2012, 2 weeks after the capping operation was finished. Scientists from G&A collected a series of sediment profile images at a total of 42 stations (Germano and Associates, 2013) and mapped the presence and thickness of the cap layer. Two follow-up monitoring surveys were performed at yearly intervals, with the first (August 13-14, 2013) occurring approximately one year after the initial capping project, and the second occurring this past year on July 29-30, 2014. During both of these subsequent monitoring surveys, scientists from G&A collected sediment profile images from the same 42 stations as the initial post-cap survey in October 2012 as well as an additional 8 stations (Figure 1) to monitor the recolonization of the cap as well as the active reworking of the reactive amendment into the sediment by resident infauna. On all three surveys, two different versions of an Ocean Imaging Systems Model 3731 sediment profile camera were used; a standard SPI system using a surrounding frame that was deployed from a vessel (Figure 2), and a hand-held aluminum SPI system (Figure 3) deployed by PSNS & IMF divers for stations that were located under the pier and inaccessible for sampling with a boat.

SPI was developed almost four decades ago as a rapid reconnaissance tool for characterizing physical, chemical, and biological seafloor processes and has been used in numerous seafloor surveys throughout North America, Asia, Europe, and Africa (Rhoads and Germano 1982, 1986, 1990; Revelas et al. 1987; Diaz and Schaffner, 1988; Valente et al. 1992; Germano et al. 2011). The sediment profile camera works like an inverted periscope. A Nikon D7000 16.2-megapixel SLR camera with two 8-gigabyte secure digital (SD) cards is mounted horizontally inside a watertight housing on top of a wedge-shaped prism. The prism has a Plexiglas® faceplate at the front with a mirror placed at a 45° angle at the back. The camera lens looks down at the mirror, which is reflecting the image from the faceplate. The prism has an internal strobe mounted inside at the back of the wedge to provide illumination for the image; this chamber is filled with distilled water, so the camera always has an optically clear path. This wedge assembly is mounted on a moveable carriage within a stainless steel frame. The frame is lowered to the seafloor on a winch wire, and the tension on the wire keeps the prism in its "up" position. When the frame comes to rest on the seafloor, the winch wire goes slack (see Figure 2) and the camera prism descends into the sediment at a slow, controlled rate by the dampening action of a hydraulic piston so as not to disturb the sediment-water interface. On the way down, it trips a trigger that activates a time-delay circuit of variable length (operator-selected) to allow the camera to penetrate the seafloor before any image is taken. The knife-sharp edge of the prism transects the sediment, and the prism penetrates the bottom. The strobe is discharged after an appropriate time delay to obtain a cross-

sectional image of the upper 20 cm of the sediment column. The resulting images give the viewer the same perspective as looking through the side of an aquarium half-filled with sediment. After the first image is obtained at the first location, the camera is then raised up about 2 to 3 meters off the bottom to allow the strobe to recharge; a wiper blade mounted on the frame removes any mud adhering to the faceplate. The strobe recharges within 5 seconds, and the camera is ready to be lowered again for a replicate image. Surveys can be accomplished rapidly by "pogo-sticking" the camera across an area of seafloor while recording positional fixes on the surface vessel.

The hand-held SPI system (Figure 4) works on the same design, except that there is no time delay once the watertight switch is activated by the diver after the prism is inserted into the sediment. There is no wiper blade on the hand-held system, so the diver needs to clean the faceplate of the camera prism manually with a scrub brush after each image is taken.

Two types of adjustments to the SPI system are typically made in the field: physical adjustments to the chassis stop collars on the frame-deployed system or adding/subtracting lead weights to the chassis to control penetration in harder or softer sediments, and electronic software adjustments to the Nikon D7000 to control camera settings. Camera settings (f-stop, shutter speed, ISO equivalents, digital file format, color balance, etc.) are selectable through a water-tight USB port on the camera housing and Nikon Control Pro® software. At the beginning of the survey, the time on both of the sediment profile cameras' internal data loggers was synchronized with the clock on the sampling vessel to local time. Details of the camera settings for each digital image are available in the associated parameters file embedded in the electronic image file; for this survey, the ISO-equivalent was set at 800. The additional camera settings used were as follows: shutter speed was 1/250, f8, white balance set to flash, color mode to Adobe RGB, sharpening to none, noise reduction off, and storage in compressed raw Nikon Electronic Format (NEF) files (approximately 20 MB each). Electronic files were converted to high-resolution jpeg (14-bit) format files (49278 x 3264 pixels) using Nikon Capture NX2® software (Version 2.3.7.).

Three replicate images were taken at each station at the vessel-deployed frame stations, while 2 replicate images were taken by the divers at each of the under-pier stations; each SPI replicate is identified by the time recorded on the digital image file in the camera and in the field log on the vessel. The SD card was immediately surrendered at the completion of the survey to PSNS & IMF for review and approval for public distribution. The unique time stamp on the digital image was then cross-checked with the time stamp recorded in the written sample logs. After the images were cleared for public release, they were re-named with the appropriate station name based on the time stamp on each image.

Test exposures of the Kodak® Color Separation Guide (Publication No. Q-13) were made on deck at the beginning of the survey to verify that all internal electronic systems were

working to design specifications and to provide a color standard against which final images could be checked for proper color balance. A spare camera and charged battery were carried in the field at all times to insure uninterrupted sample acquisition. After deployment of the camera at each station, the frame counter was checked to make sure that the requisite number of replicates had been taken. In addition, a prism penetration depth indicator on the camera frame was checked to verify that the optical prism had actually penetrated the bottom to a sufficient depth. If images were missed (frame counter indicator or verification from digital download) or the penetration depth was insufficient (penetration indicator), chassis stops were adjusted and/or weights were added or removed, and additional replicate images were taken. Changes in prism weight amounts, the presence or absence of mud doors, and chassis stop positions were recorded for each replicate image.

Following completion of the field operations, the raw NEF image files were converted to high-resolution Joint Photographic Experts Group (jpeg) format files using the minimal amount of image file compression. Once converted to jpeg format, the intensity histogram (RGB channel) for each image was adjusted in Adobe Photoshop® to maximize contrast without distortion. The jpeg images were then imported to Sigmascan Pro® (Aspire Software International) for image calibration and analysis. Calibration information was determined by measuring 1-cm gradations from the Kodak® Color Separation Guide. This calibration information was applied to all SPI images analyzed. Linear and area measurements were recorded as number of pixels and converted to scientific units using the calibration information.

Measured parameters were recorded on a Microsoft® Excel© spreadsheet. G&A's senior scientist (Dr. J. Germano) subsequently checked all these data as an independent quality assurance/quality control review of the measurements before final interpretation was performed.

2.1 MEASURING, INTERPRETING, AND MAPPING SPI PARAMETERS

2.1.1 Prism Penetration Depth

The SPI prism penetration depth was measured from the bottom of the image to the sediment-water interface. The area of the entire cross-sectional sedimentary portion of the image was digitized, and this number was divided by the calibrated linear width of the image to determine the average penetration depth.

Prism penetration is a noteworthy parameter; if the number of weights used in the camera is held constant throughout a survey, the camera functions as a static-load penetrometer. Comparative penetration values from sites of similar grain size give an indication of the relative water content of the sediment. Highly bioturbated sediments and rapidly

accumulating sediments tend to have the highest water contents and greatest prism penetration depths.

The depth of penetration also reflects the bearing capacity and shear strength of the sediments. Overconsolidated or relic sediments and shell-bearing sands resist camera penetration. Highly bioturbated, sulfitic, or methanogenic muds are the least consolidated, and deep penetration is typical. Seasonal changes in camera prism penetration have been observed at the same station in other studies and are related to the control of sediment geotechnical properties by bioturbation (Rhoads and Boyer 1982). The effect of water temperature on bioturbation rates appears to be important in controlling both biogenic surface relief and prism penetration depth (Rhoads and Germano 1982).

2.1.2 Thickness of Depositional Layers

Because of the camera's unique design, SPI can be used to detect the thickness of dredged material and depositional layers (like the reactive amendment). SPI is effective in measuring layers ranging in thickness from 1 mm to 20 cm (the height of the SPI optical window). During image analysis, the thickness of the newly deposited sedimentary layers can be determined by measuring the distance between the pre- and post-disposal sediment-water interface. Recently deposited material is usually evident because of its unique optical reflectance and/or color relative to the underlying material representing the pre-disposal surface. Also, in most cases, the point of contact between the two layers is clearly visible as a textural change in sediment composition, facilitating measurement of the thickness of the newly deposited layer.

2.1.3 Apparent Redox Potential Discontinuity Depth

Aerobic near-surface marine sediments typically have higher reflectance relative to underlying hypoxic or anoxic sediments. Surface sands washed free of mud also have higher optical reflectance than underlying muddy sands. These differences in optical reflectance are readily apparent in SPI images; the oxidized surface sediment contains particles coated with ferric hydroxide (an olive or tan color when associated with particles), while reduced and muddy sediments below this oxygenated layer are darker, generally gray to black (Fenchel 1969; Lyle 1983). The boundary between the colored ferric hydroxide surface sediment and underlying gray to black sediment is called the apparent redox potential discontinuity (aRPD).

The depth of the aRPD in the sediment column is an important time-integrator of dissolved oxygen conditions within sediment porewaters. In the absence of bioturbating organisms, this high reflectance layer (in muds) will typically reach a thickness of 2 mm below the sediment-water interface (Rhoads 1974). This depth is related to the supply rate of molecular oxygen by diffusion into the bottom and the consumption of that oxygen by the sediment and associated microflora. In sediments that have very high

sediment oxygen demand (SOD), the sediment may lack a high reflectance layer even when the overlying water column is aerobic.

In the presence of bioturbating macrofauna, the thickness of the high reflectance layer may be several centimeters. The relationship between the thickness of this high reflectance layer and the presence or absence of free molecular oxygen in the associated porewaters must be considered with caution. The actual RPD is the boundary or horizon that separates the positive reduction potential (Eh) region of the sediment column from the underlying negative Eh region. The exact location of this Eh = 0 boundary can be determined accurately only with microelectrodes; hence, the relationship between the change in optical reflectance, as imaged with the SPI camera, and the actual RPD can be determined only by making the appropriate *in situ* Eh measurements. For this reason, the optical reflectance boundary, as imaged, was described in this study as the “apparent” RPD and it was mapped as a mean value. In general, the depth of the actual Eh = 0 horizon will be either equal to or slightly shallower than the depth of the optical reflectance boundary (Rosenberg et al., 2001). This is because bioturbating organisms can mix ferric hydroxide-coated particles downward into the bottom below the Eh = 0 horizon. As a result, the mean aRPD depth can be used as an estimate of the depth of porewater exchange, usually through porewater irrigation (bioturbation). Biogenic particle mixing depths can be estimated by measuring the maximum and minimum depths of imaged feeding voids in the sediment column. This parameter represents the particle mixing depths of head-down feeders, mainly polychaetes.

The rate of depression of the aRPD within the sediment is relatively slow in organic-rich muds, on the order of 200 to 300 micrometers per day; therefore this parameter has a long time constant (Germano and Rhoads 1984). The rebound in the aRPD is also slow (Germano 1983). Measurable changes in the aRPD depth using the SPI optical technique can be detected over periods of 1 or 2 months. This parameter is used effectively to document changes (or gradients) that develop over a seasonal or yearly cycle related to water temperature effects on bioturbation rates, seasonal hypoxia, SOD, and infaunal recruitment. Time-series RPD measurements following a disturbance can be a critical diagnostic element in monitoring the degree of recolonization in an area by the ambient benthos (Rhoads and Germano 1986).

The mean aRPD depth also can be affected by local erosion. The peaks of disposal mounds commonly are scoured by divergent flow over the mound. This scouring can wash away fines and shell or gravel lag deposits, and can result in very thin surface oxidized layer. During storm periods, erosion may completely remove any evidence of the aRPD (Fredette et al. 1988).

Another important characteristic of the aRPD is the contrast in reflectance at this boundary. This contrast is related to the interactions among the degree of organic loading, the bioturbation activity in the sediment, and the concentrations of bottom-water dissolved oxygen in an area. High inputs of labile organic material increase SOD and,

subsequently, sulfate reduction rates and the associated abundance of sulfide end products. This results in more highly reduced, lower-reflectance sediments at depth and higher aRPD contrasts. In a region of generally low aRPD contrasts, images with high aRPD contrasts indicate localized sites of relatively large inputs of organic-rich material such as phytoplankton, other naturally-occurring organic detritus, dredged material, or sewage sludge.

Because the determination of the aRPD requires discrimination of optical contrast between oxidized and reduced particles, it is difficult, if not impossible, to determine the depth of the aRPD in well-sorted sands of any size that have little to no silt or organic matter in them (Painter et al, 2007). When using SPI technology on sand bottoms, little information other than grain-size, prism penetration depth, and boundary roughness values can be measured; while oxygen has no doubt penetrated the sand beneath the sediment-water interface just due to physical forcing factors acting on surface roughness elements (Ziebis et al., 1996; Huettel et al., 1998), estimates of the mean aRPD depths in these types of sediments are indeterminate with conventional white light photography.

2.1.4 Infaunal Successional Stage

The mapping of infaunal successional stages is readily accomplished with SPI technology. These stages are recognized in SPI images by the presence of dense assemblages of near-surface polychaetes and/or the presence of subsurface feeding voids; both may be present in the same image. Mapping of successional stages is based on the theory that organism-sediment interactions in fine-grained sediments follow a predictable sequence after a major seafloor perturbation. This theory states that primary succession results in “the predictable appearance of macrobenthic invertebrates belonging to specific functional types following a benthic disturbance. These invertebrates interact with sediment in specific ways. Because functional types are the biological units of interest..., our definition does not demand a sequential appearance of particular invertebrate species or genera” (Rhoads and Boyer 1982). This theory is presented in Pearson and Rosenberg (1978) and further developed in Rhoads and Germano (1982) and Rhoads and Boyer (1982).

This continuum of change in animal communities after a disturbance (primary succession) has been divided subjectively into four stages: Stage 0, indicative of a sediment column that is largely devoid of macrofauna, occurs immediately following a physical disturbance or in close proximity to an organic enrichment source; Stage 1 is the initial community of tiny, densely populated polychaete assemblages; Stage 2 is the start of the transition to head-down deposit feeders; and Stage 3 is the mature, equilibrium community of deep-dwelling, head-down deposit feeders (Figure 4).

After an area of bottom is disturbed by natural or anthropogenic events, the first invertebrate assemblage (Stage 1) appears within days after the disturbance. Stage 1 consists of assemblages of tiny tube-dwelling marine polychaetes that reach population

densities of 10^4 to 10^6 individuals per m^2. These animals feed at or near the sediment-water interface and physically stabilize or bind the sediment surface by producing a mucous "glue" that they use to build their tubes. Sometimes deposited dredged material layers contain Stage 1 tubes still attached to mud clasts from their location of origin; these transported individuals are considered as part of the *in situ* fauna in our assignment of successional stages.

If there are no repeated disturbances to the newly colonized area, then these initial tube-dwelling suspension or surface-deposit feeding taxa are followed by burrowing, head-down deposit-feeders that rework the sediment deeper and deeper over time and mix oxygen from the overlying water into the sediment. The animals in these later-appearing communities (Stage 2 or 3) are larger, have lower overall population densities (10 to 100 individuals per m^2), and can rework the sediments to depths of 3 to 20 cm or more. These animals "loosen" the sedimentary fabric, increase the water content in the sediment, thereby lowering the sediment shear strength, and actively recycle nutrients because of the high exchange rate with the overlying waters resulting from their burrowing and feeding activities.

In dynamic estuarine and coastal environments, it is simplistic to assume that benthic communities always progress completely and sequentially through all four stages in accordance with the idealized conceptual model depicted in Figure 3. Various combinations of these basic successional stages are possible. For example, secondary succession can occur (Horn, 1974) in response to additional labile carbon input to surface sediments, with surface-dwelling Stage 1 or 2 organisms co-existing at the same time and place with Stage 3, resulting in the assignment of a "Stage 1 on 3" or "Stage 2 on 3" designation.

While the successional dynamics of invertebrate communities in fine-grained sediments have been well-documented, the successional dynamics of invertebrate communities in sand and coarser sediments are not well-known. Subsequently, the insights gained from sediment profile imaging technology regarding biological community structure and dynamics in sandy and coarse-grained bottoms are fairly limited.

2.1.5 Biological Mixing Depth

During the past two decades, there has been a considerable emphasis on studying the effects of bioturbation on sediment geotechnical properties as well as sediment diagenesis (Ekman et al., 1981; Nowell et al., 1981; Rhoads and Boyer, 1982; Grant et al., 1982; Boudreau, 1986; 1994; 1998). However, an increasing focus of research is centering on the rates of contaminant flux in sediments (Reible and Thibodeaux, 1999; François et al., 2002; Gilbert et al., 2003), and the two parameters that affect the time rate of contaminant flux the greatest are erosion and bioturbation (Reible and Thibodeaux, 1999). The depth to which sediments are bioturbated, or the biological mixing depth, can be an important

parameter for studying either nutrient or contaminant flux in sediments. While the apparent RPD is one potential measure of biological mixing depth, it is quite common in profile images to see evidence of biological activity (burrows, voids, or actual animals) well below the mean apparent RPD. Both the minimum and maximum linear distance from the sediment surface to both the shallowest and deepest feature of biological activity can be measured along with a notation of the type of biogenic structure measured. For this report, the maximum depth to which any biological activity was noted was measured and mapped.

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3.0 RESULTS

While replicate images were taken at each station, the amount of disturbance caused by the diver-deployed system did not allow for reliable measurements of precision between the two replicate images, so only one replicate (the least disturbed) from each station sampled by divers was analyzed. The amount of debris in and around the piers coupled with the high density of shell fragments also created high variation in the penetration depth at the frame deployed stations, with cross-sectional sedimentary structures masked or destroyed by debris (natural or anthropogenic) being dragged down by the prism cutting blade. While a copy of all images collected was provided to the client, given the variation in image feature preservation (regardless of whether they were taken with the frame-deployed or diver-deployed system), and because this variation in cross-sectional structural appearance was not really indicative of natural variance in the measured parameters, the best image (least disturbed) from each station was analyzed. A complete set of all the summary data measured from each image is presented in Appendix A.

The results for some SPI parameters are sometimes indicated in the data appendix or on the maps as being “Indeterminate” (Ind). This is a result of the sediments being either: 1) too compact for the profile camera to penetrate adequately, preventing observation of surface or subsurface sediment features, 2) too soft to bear the weight of the camera, resulting in over-penetration to the point where the sediment/water interface was above the window (imaging area) on the camera prism (the sediment/water interface must be visible to measure most of the key SPI parameters like aRPD depth, penetration depth, and infaunal successional stage), or 3) the biogenic and sedimentary stratigraphic structure was compromised or destroyed by sampling artifacts caused by the divers inserting the prism into the sediment (either vibrating or wiggling the camera to achieve greater penetration, which allowed suspended sediment to collect in between the cross-sectional profile and the faceplate of the prism)

SPI has been shown to be a powerful reconnaissance tool that can efficiently map gradients in sediment type, biological communities, or disturbances from physical forces or organic enrichment. The results and conclusions in this report are about dynamic processes that have been deduced from imaged structures; as such, they should be considered hypotheses available for further testing/confirmation.

3.1 PRISM PENETRATION DEPTH

Sediments throughout the site ranged from sandy silt to muds with minor fractions of very fine to fine sand with high percentages of shell hash (stations under Pier 7; see Figure 5) to pebble and cobble armoring over silty sands (Figure 6). As noted from the results of the past two surveys, the addition of the AquaGate amendment also provided some surface armoring at select stations which impeded camera prism penetration (Figure 7). The overall site prism penetration depth was similar to the values measured in 2013, with values ranging from 2.3 to 20.0 cm, with an overall site average of 12.2 cm; the spatial distribution of mean penetration depth at all stations sampled is shown in Figure 8.

3.2 THICKNESS OF REACTIVE AMENDMENT LAYER

Measureable deposits of AquaGate+PAC™ could be seen at 14 stations this year as compared to 16 stations last year; natural depositional processes and bioturbation of the sediments by the resident infauna will mask the signature of this depositional layer over time. At those stations where the cap material could be detected, the mean thickness ranged from trace layers to 18.6 cm, with an average thickness of 10.5 cm at those 14 stations where a distinct layer could be measured. The footprint of the visible cap is shown in Figure 9.

3.3 APPARENT REDOX POTENTIAL DISCONTINUITY DEPTH

The distribution of mean apparent RPD depths is shown in Figure 10; mean aRPD depths could not be measured at 5 of the stations sampled by divers because of sampling artifacts that caused distortions to the sediment profile and eliminated the possibility of any accurate measurements; cobble/shell or drag-down of surface megafauna (serpulid polychaetes or anemones) at 5 of the stations sampled with the frame camera either prevented sufficient prism penetration (cobble/shell stations) or distorted the structure of the sediment profile against the faceplate (faunal interference) to prevent measurement of an accurate aRPD measurement. While one station still had no detectable aRPD present (compared with 8 stations in 2013), the remaining stations had values ranging from 0.2 to 5.9 cm (Figure 10; Appendix A), with an overall site average of 2.1 cm.

3.4 INFAUNAL SUCCESSIONAL STAGE

The mapped distribution of infaunal successional stages is shown in Figure 11; there was a noticeable improvement in biological community status under the pier as well as at the stations outboard of the pier compared with last year. There were 8 stations where either prism penetration was too shallow or the profile was disturbed by sampling artifacts where infaunal successional status could not be determined, and there was one station

under the pier (Figure 12) where there were retrograde habitat conditions compared to 2013 (Station 6-2). However, the presence of Stage 3 taxa (larger infaunal deposit feeders) was evident at 34 of the 50 stations (compared to only 18 stations in 2013 where Stage 3 taxa were evident).

3.5 MAXIMUM BIOLOGICAL MIXING DEPTH

The spatial distribution of the maximum depth to which any biological activity was seen in the study area is shown in Figure 13. Some of the deepest infaunal burrowing was found at those stations under the pier where the reactive amendment had been placed; maximum depth of biogenic activity ranged from 4.7 to 20.2 cm, with an overall site average of 12.1 cm.

4.0 DISCUSSION

The results from this third and final post-capping SPI survey showed gradual improvement and recovery following the disturbance of the capping operation, as predicted by soft-bottom successional research (Figure 4). Over time and with the lack of continued severe disturbance, the appearance of Stage 3 (deposit-feeding) taxa as part of the resident infauna are not only re-working the reactive amendment into the sediment but also causing the depth of the aRPD to increase (Figure 14) as well fostering increased nutrient exchange with the overlying water.

The pattern of the optical signature of the reactive amendment slowly “disappearing” through natural depositional processes and bioturbational activity of the infaunal community that was documented in the 2013 survey continued in this survey; initially, the presence of the reactive amendment could be detected at 19 stations. After 1 year (2013 survey), the layer was only visible at 16 stations, and in this most recent survey, the layer could only be detected at 14 stations (Figure 9).

While this final survey showed that activated cap amendment continued to be reworked into the sediments by the resident infauna as originally planned and overall habitat quality appears to be gradually improving over time , there was one location under the pier where this was not the case. Station 6/5-2 continues to look the same as it did right after the material was placed in 2012 and as it did in last year’s survey (Figure 15); there is no detectable aRPD and a notable lack of deposit-feeding taxa from more mature infaunal successional seres. It could be that sediments in this one small area are still chemically-challenged and inhibiting successful recolonization by native infauna.

None of this work would have been possible without the cooperation and hard work by the PSNS & IMF Bremerton site divers. We would like to acknowledge both their attention to safety and skill in sample collection; it was truly a pleasure to have been able to collaborate with them and the rest of the PSNS & IMF Bremerton site personnel on this project over the past few years.

5.0
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FIGURES

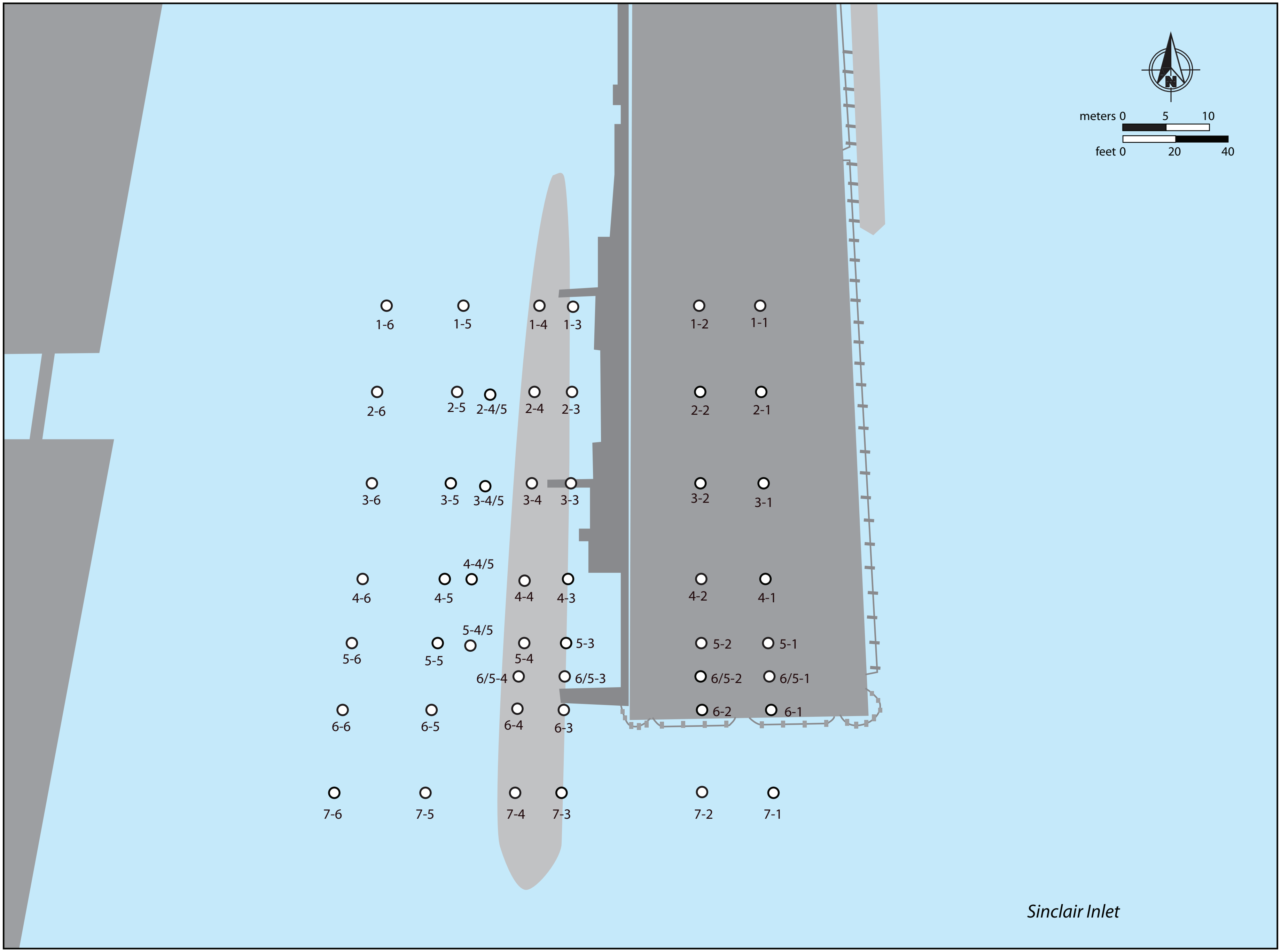


Figure 1: Location of SPI stations under and around Pier 7 at PSNS & IMF, Bremerton site, that were monitored in August 2013 and July 2014.

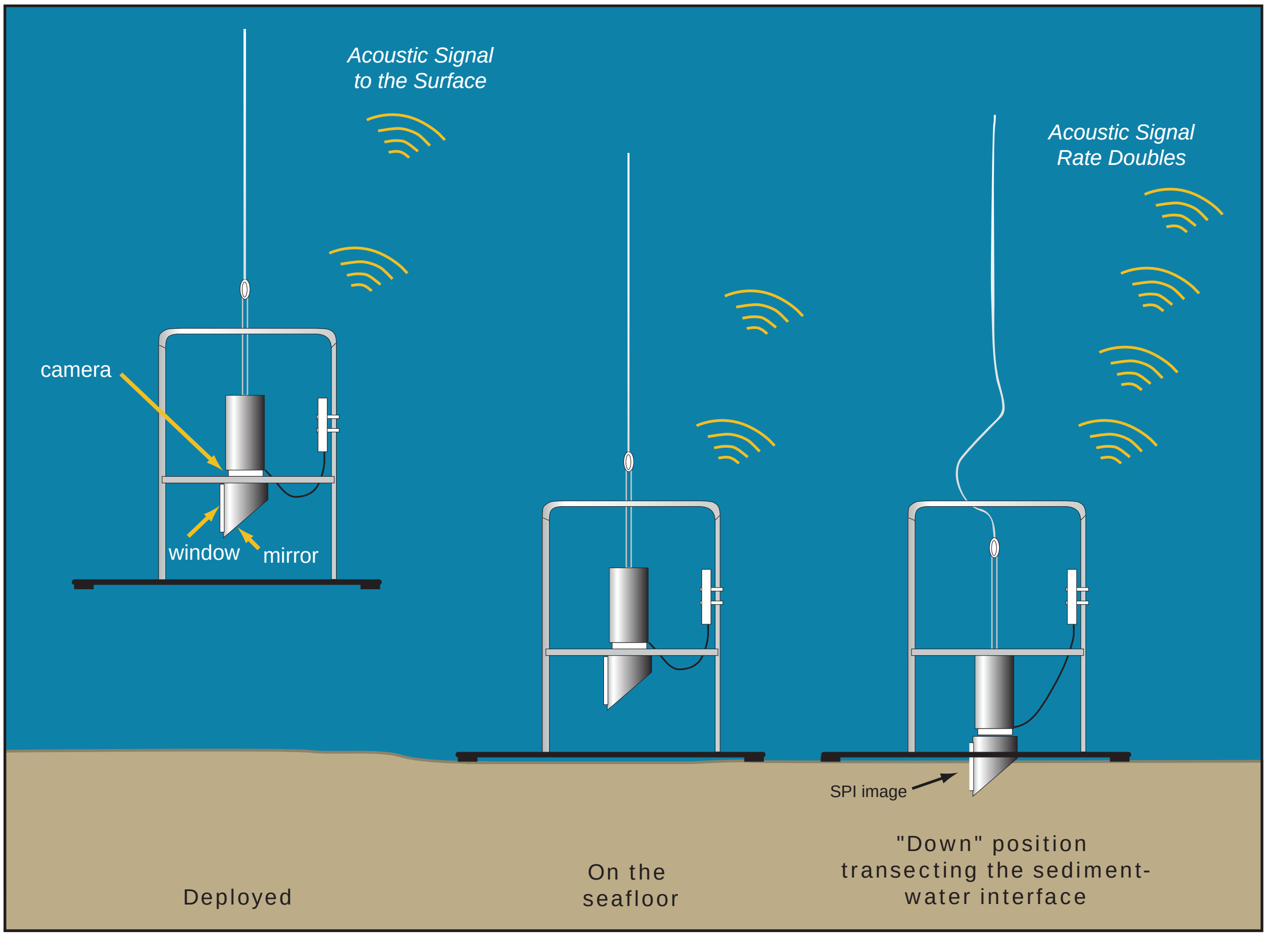


Figure 2: Deployment and operation of the SPI camera system.

Figure 3: The hand-held SPI system used by divers for all stations that were located underneath Pier 7 at PSNS & IMF, Bremerton site.

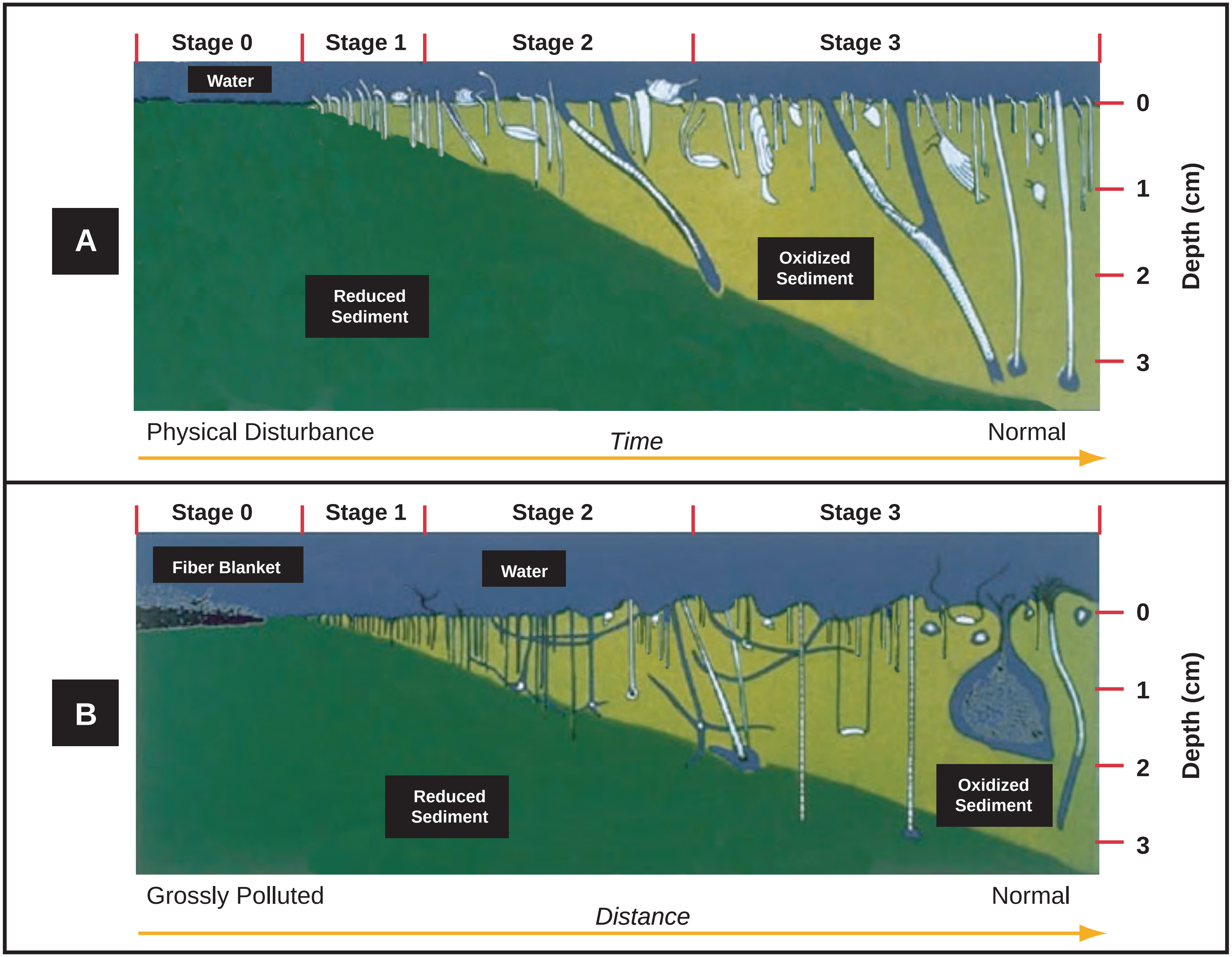
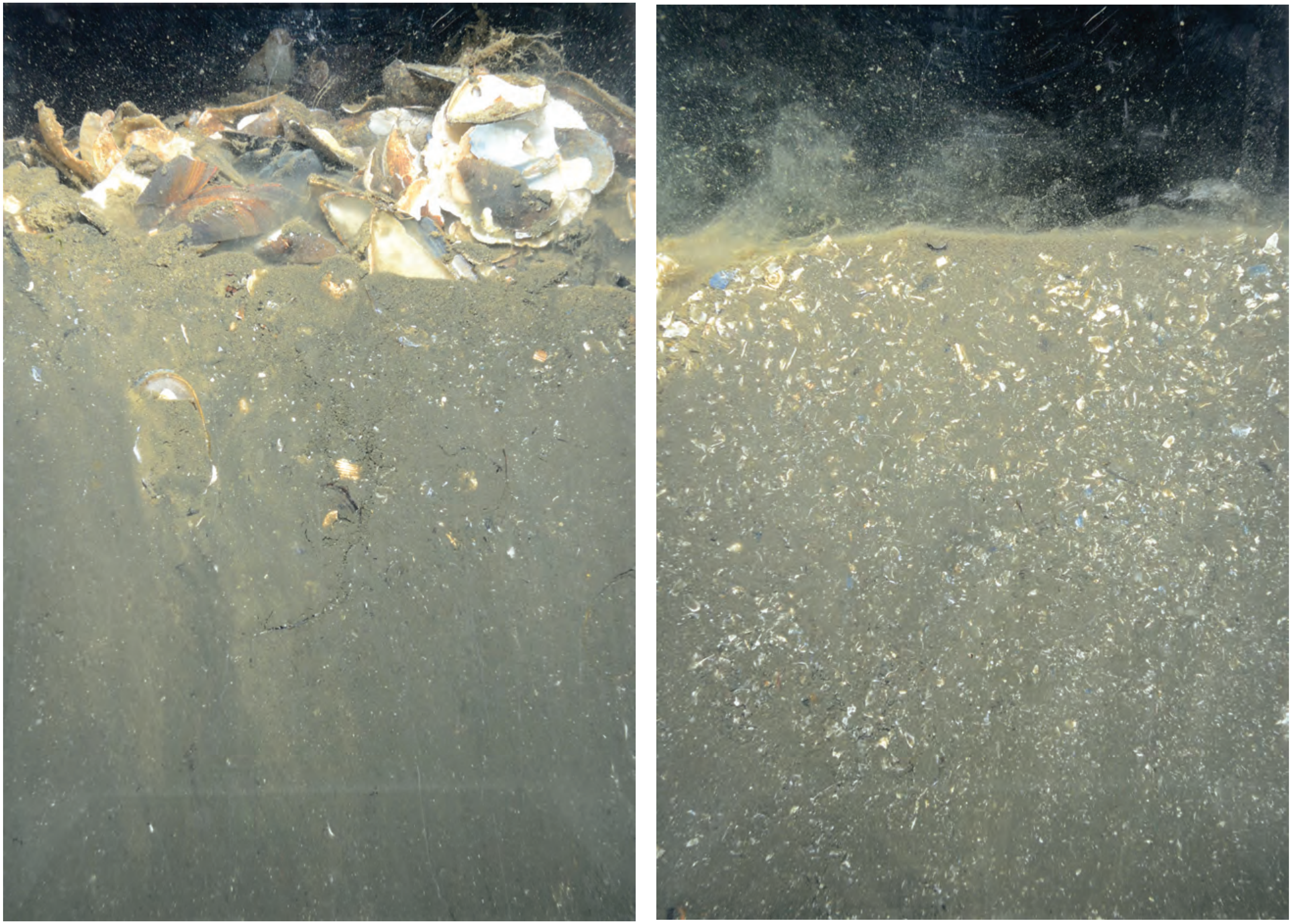


Figure 4: The stages of infaunal succession as a response of soft-bottom benthic communities to physical disturbance (top panel) or organic enrichment (bottom panel). From Rhoads and Germano, 1982.



1-2

5-1

Figure 5: These profile images from Station 1-2 and Station 5-1 show the different forms of surface armoring from shell hash (intact shells at Station 1-2 versus pulverized fragments at Station 5-1) found at many of the under pier stations. Scale: width of each profile image = 14.5 cm.

Figure 6: As in past surveys, the SPI photos from Station 1-3 show an armoring of pebble and cobbles over silty very fine sand. Scale: width of profile image = 14.5 cm.

Figure 7: This profile image from Station 5-3 shows surface armoring from the pebbles used as a carrier vehicle for the activated carbon in the AquaGate amendment that was placed under and around Pier 7. Scale: width of profile image = 14.5 cm.

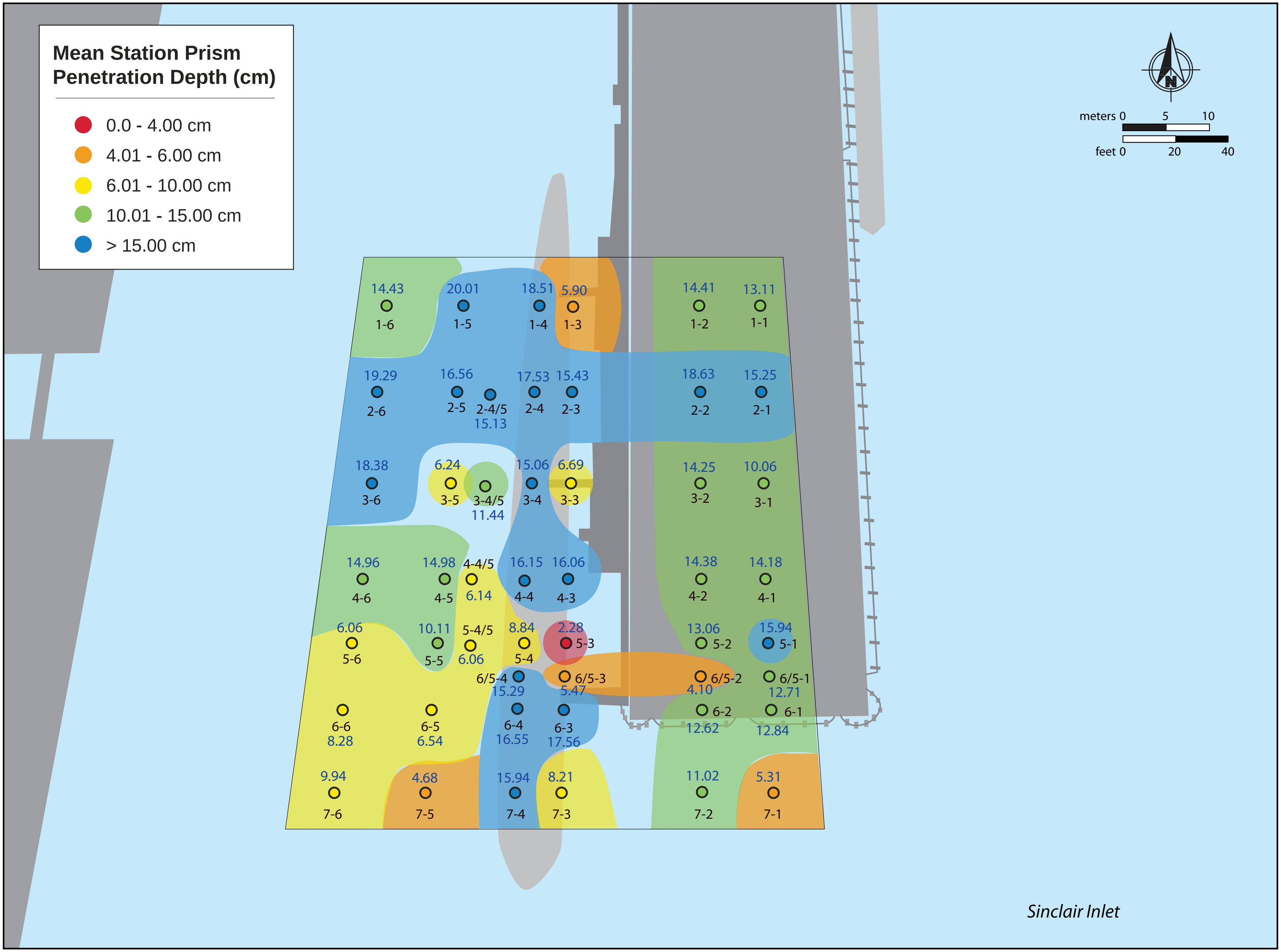


Figure 8: Spatial distribution of mean camera prism penetration depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in July 2014.

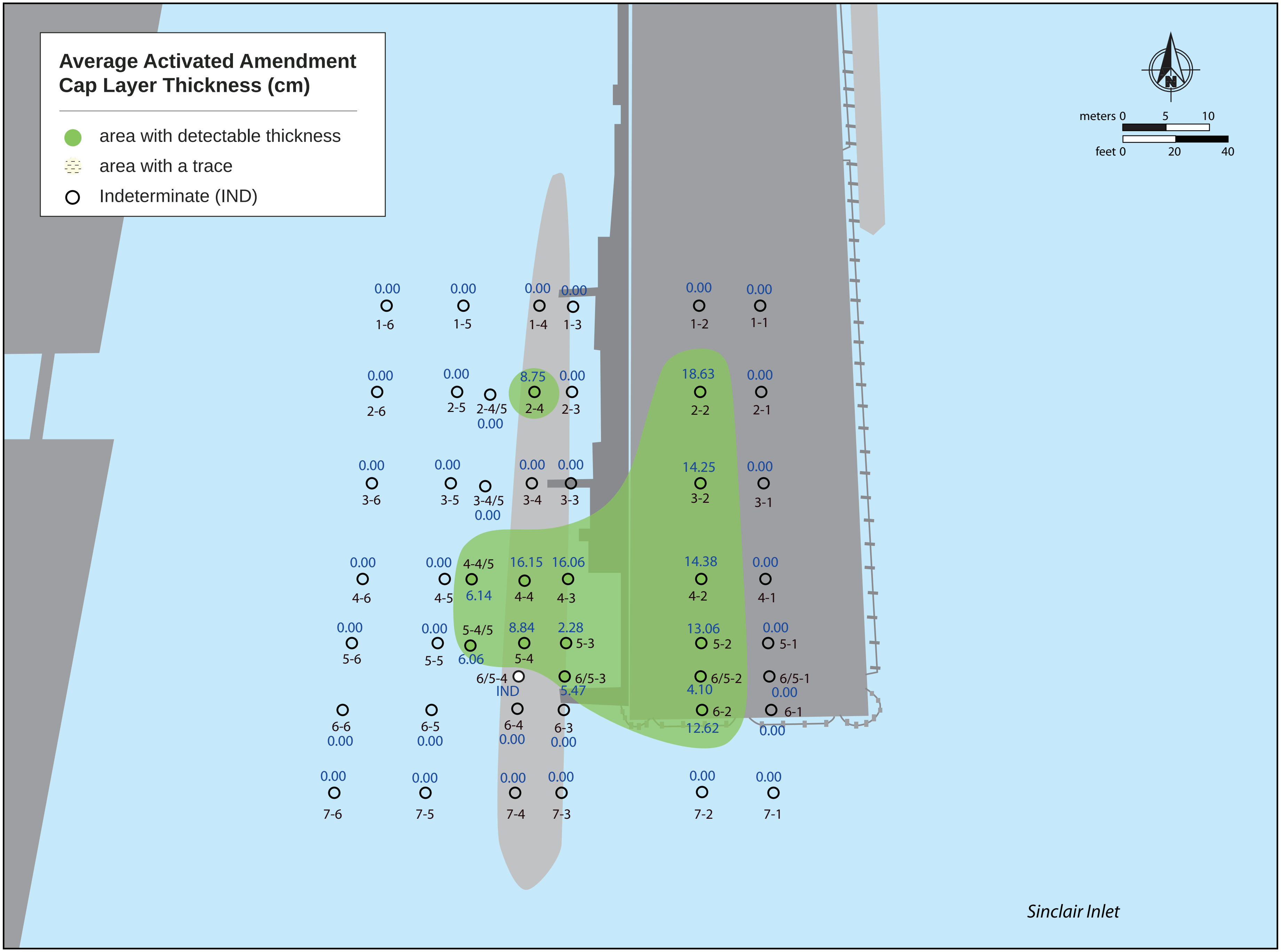


Figure 9: Spatial distribution and mean depositional thickness (cm) of the AquaGate +PAC™ material placed at locations in and around Pier 7 at the PSNS & IMF Bremerton site.

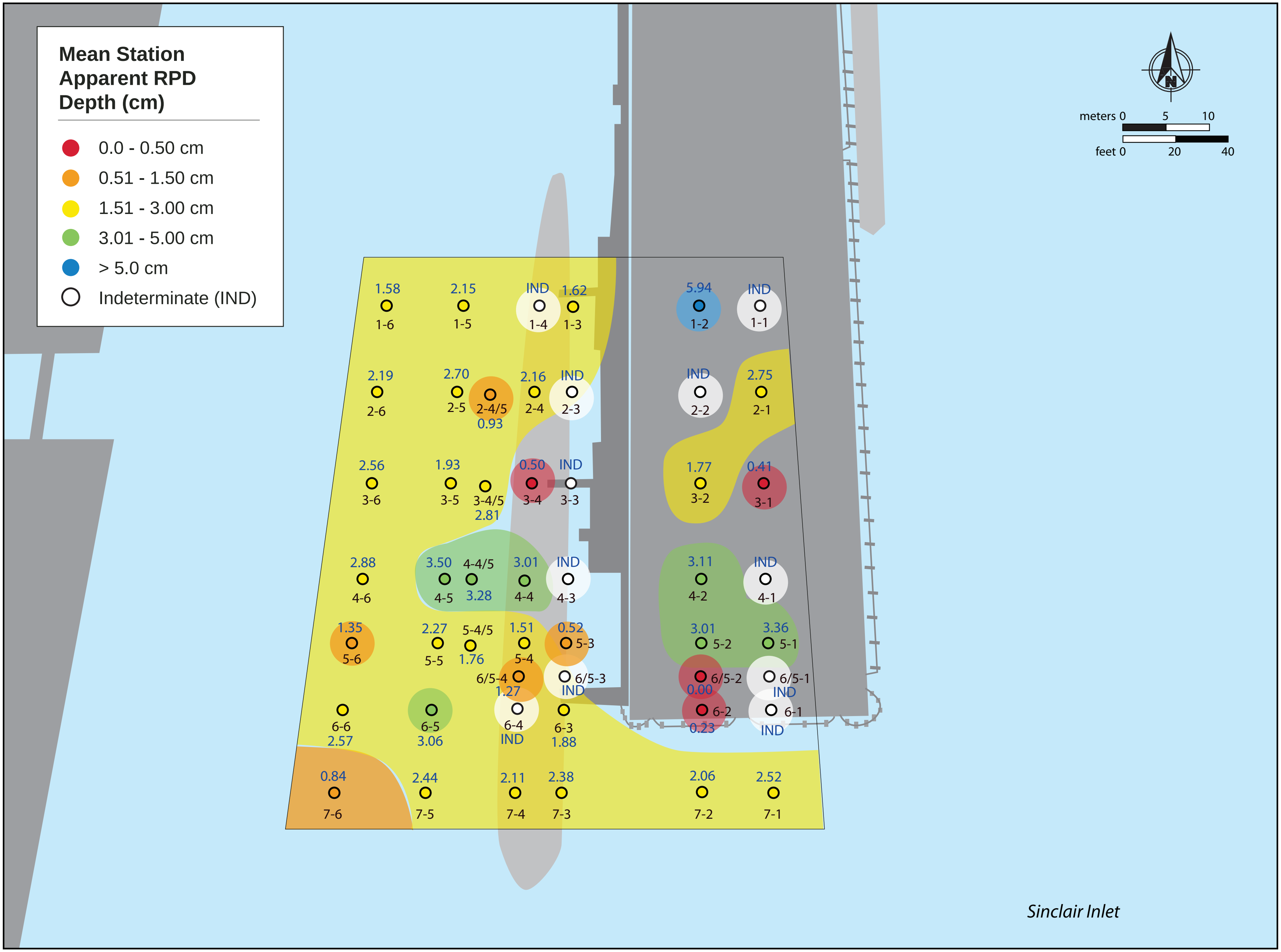


Figure 10: Spatial distribution of mean aRPD depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in July 2014.

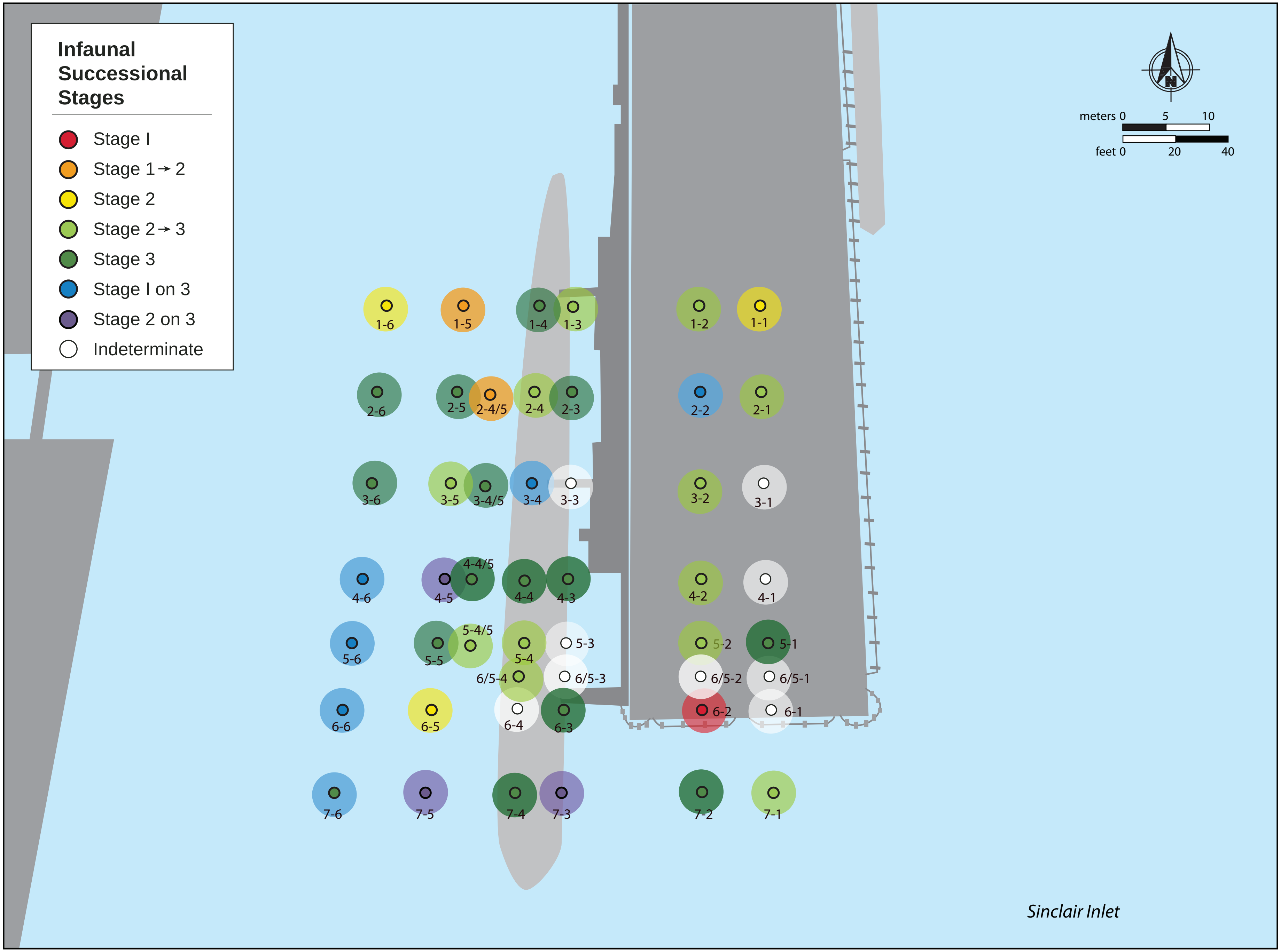
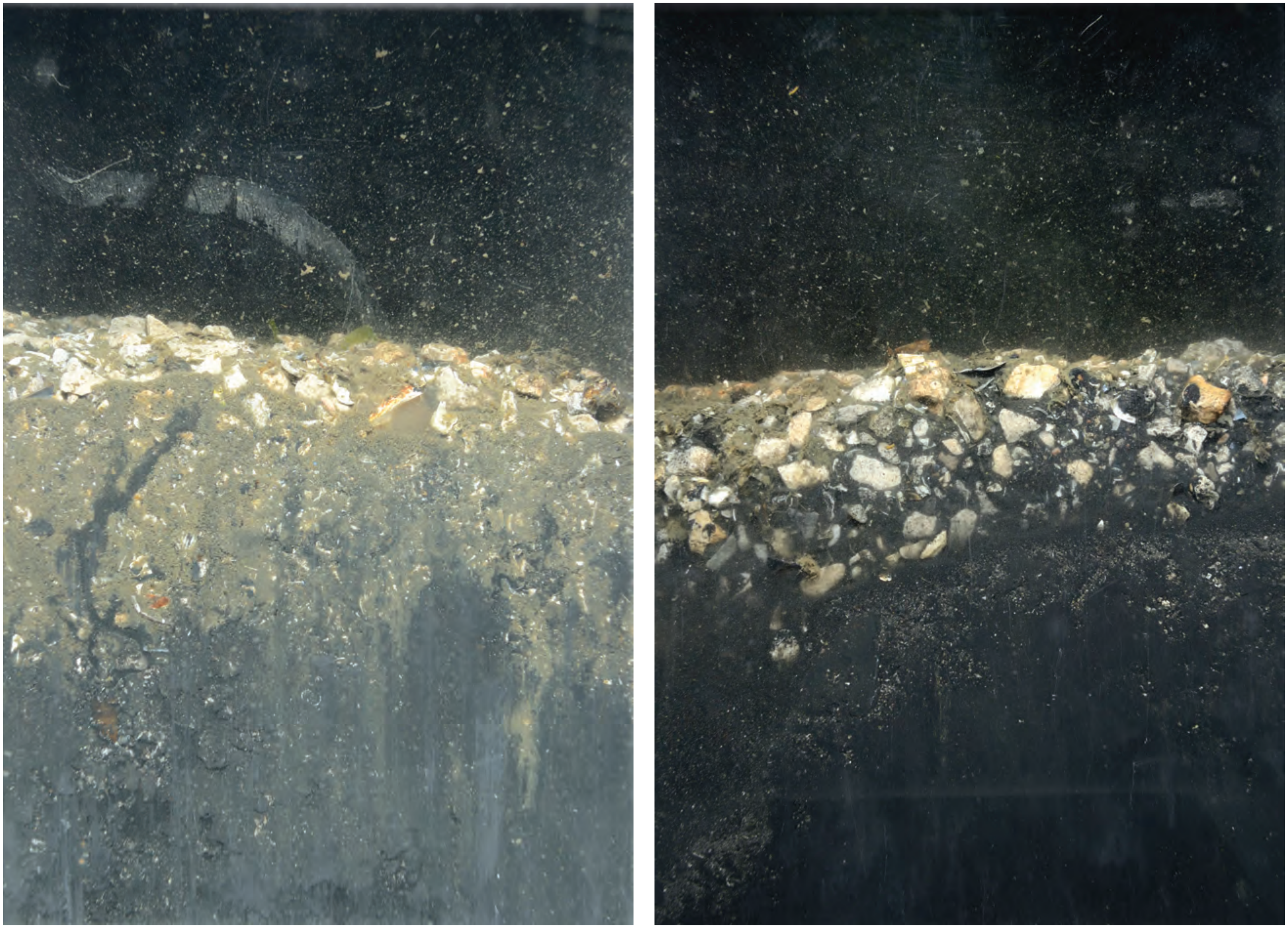


Figure 11: Spatial distribution of infaunal successional stages at Pier 7 at the PSNS & IMF Bremerton site in July 2014.



2013: 6-2 **2014: 6-2**

Figure 12: These profile images from Station 6-2 from 2013 (left) and 2014 (right) show a degradation in habitat conditions for the benthic infaunal community. Scale: width of each profile image = 14.5 cm.

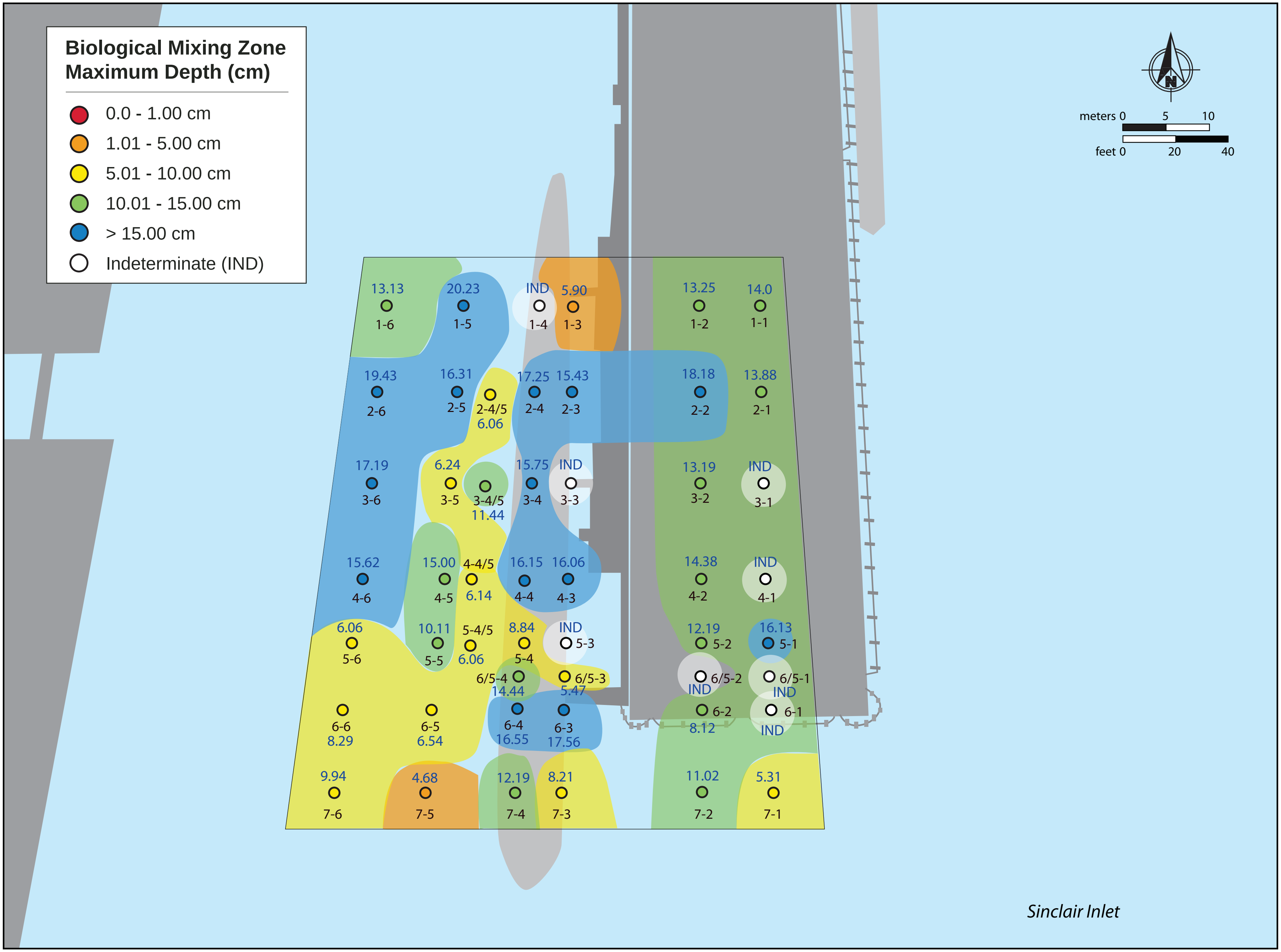
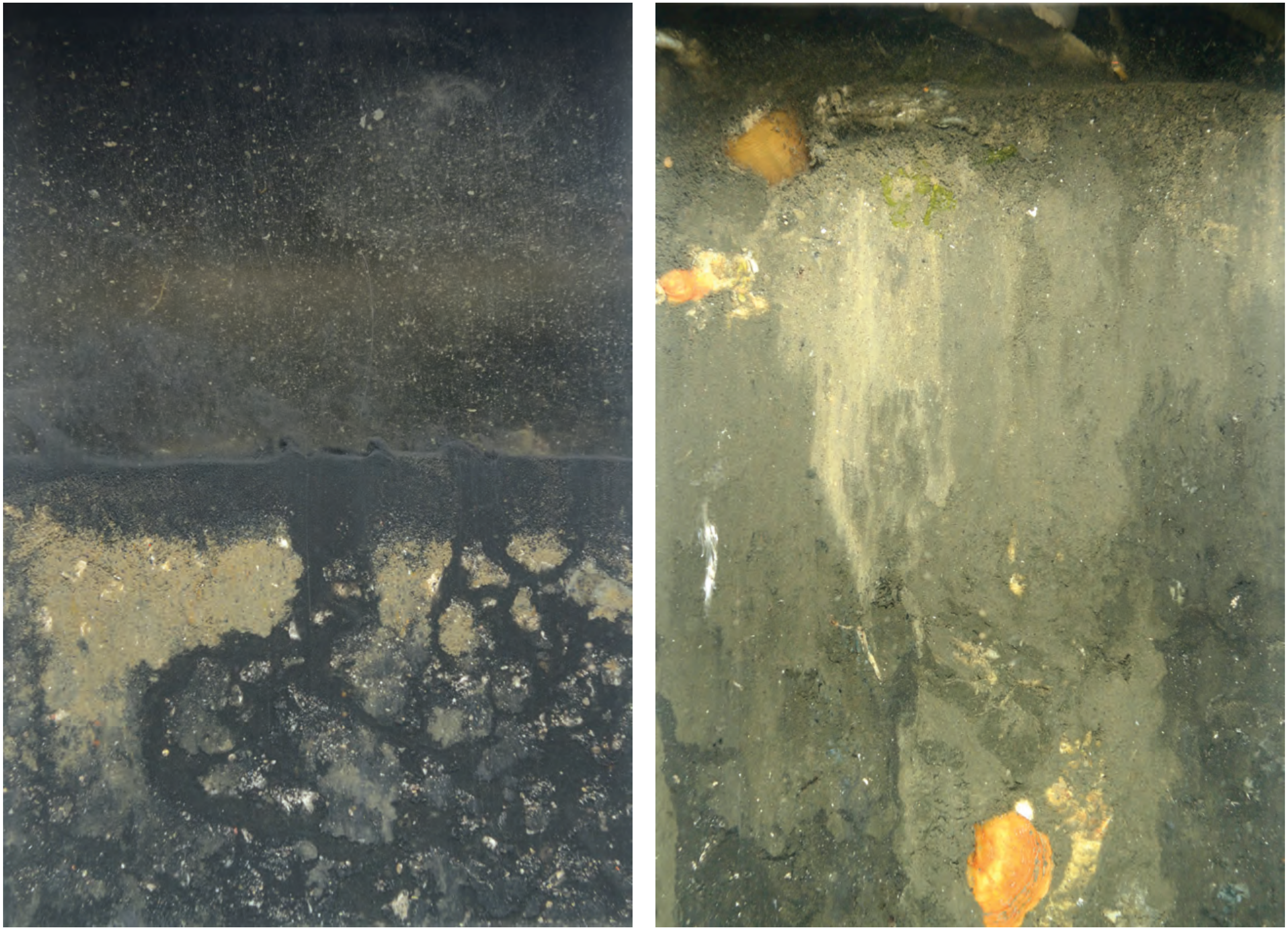
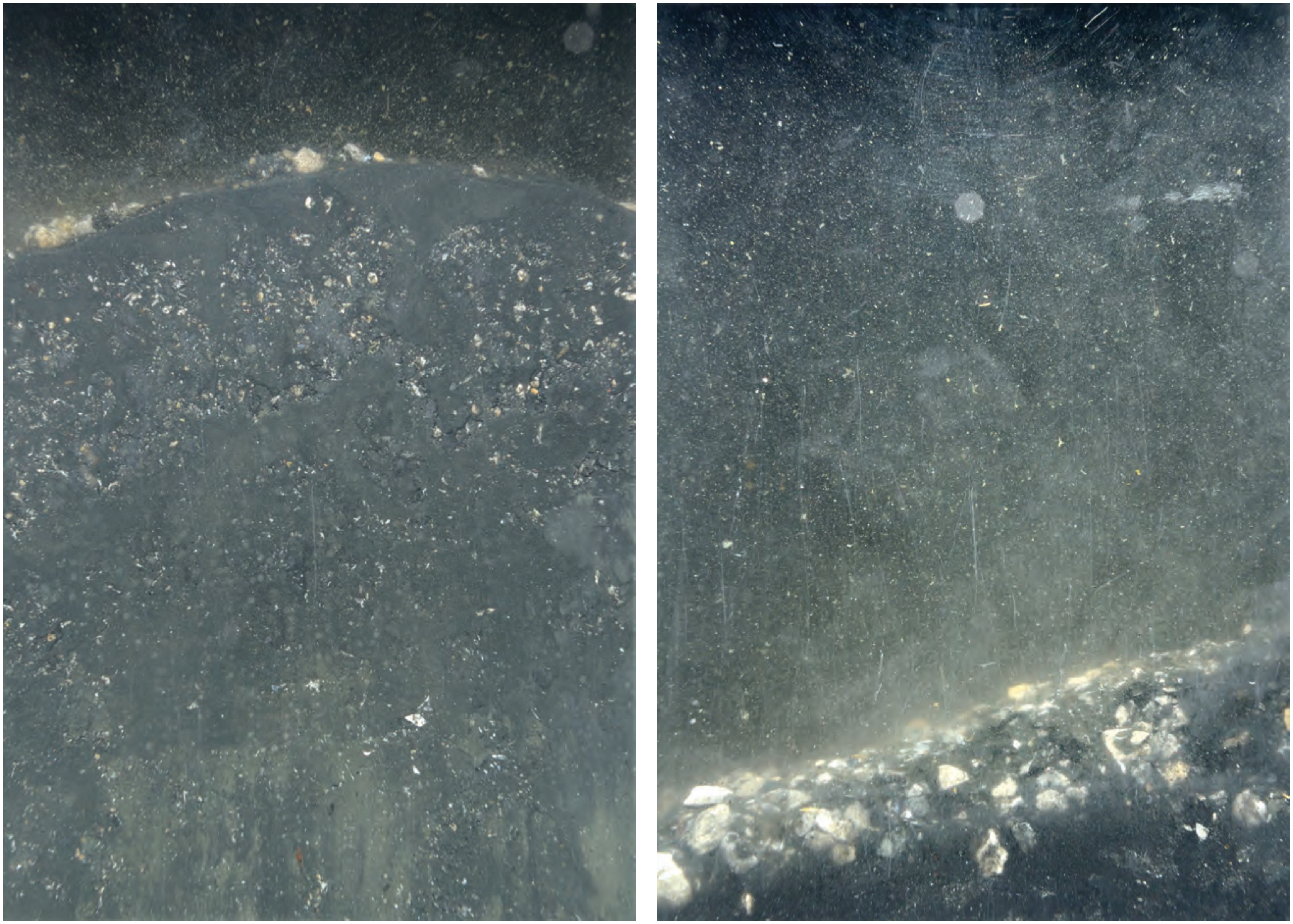


Figure 13: Spatial distribution of maximum biological mixing depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in July 2014.



2013: 4-4 **2014: 4-4**

Figure 14: These profile images from Station 4-4 from 2013 (left) and 2014 (right) show the progression of normal infaunal successional recovery over time as predicted by previous research in soft bottom recolonization studies. Scale: width of each profile image = 14.5 cm.



2013: 6/5-4 **2014: 6/5-4**

Figure 15: These profile images from Station 6/5-2 from 2013 (left) and 2014 (right) reveal little progress in infaunal community development even 2 years after the reactive amendment was placed in contrast to all the other locations. Scale: width of each profile image = 14.5 cm.

APPENDIX A

Sediment Profile Image Analysis Results

Station	Replicate	Date	Time	Stop Collar Setting (in)	# of Weights (per side)	Calibration Constant	Penetration Mean (cm)	RPD Area (sq.cm)	Mean RPD (cm)	GAC depth (cm)	Mixing Zone Max Depth (cm)	Successional Stage
1-1	B	7/29/2014	12:33:50	NA	NA	14.52	13.11	Ind	Ind	0.00	14.0	2
1-2	A	7/29/2014	12:22:05	NA	NA	14.52	14.41	86.21	5.94	0.00	13.25	2 -> 3
1-3	A	7/30/2014	13:40:34	15	4	14.52	5.90	23.51	1.62	0.00	5.90	2 -> 3
1-4	C	7/30/2014	13:50:52	15	4	14.52	18.51	Ind	Ind	0.00	ind	3
1-5	C	7/30/2014	13:23:28	15	4	14.52	20.01	31.16	2.15	0.00	20.23	1->2
1-6	A	7/30/2014	13:13:45	15	4	14.52	14.43	23.00	1.58	0.00	13.13	2
2-1	A	7/29/2014	12:05:14	NA	NA	14.52	15.25	39.93	2.75	0.00	13.88	2 -> 3
2-2	B	7/29/2014	11:58:55	NA	NA	14.52	18.63	Ind	Ind	18.63	18.18	1 on 3
2-3	A	7/30/2014	14:35:08	15	4	14.52	15.43	0.00	Ind	Ind	15.43	3
2-4	B	7/30/2014	14:40:37	15	4	14.52	17.53	31.40	2.16	8.75	17.25	2 -> 3
2-5	B	7/30/2014	14:14:52	15	4	14.52	16..56	39.19	2.70	0.00	16.31	**3**
2-6	A	7/30/2014	14:08:12	15	4	14.52	19.29	31.76	2.19	0.00	19.43	3
3-1	A	7/29/2014	11:03:02	NA	NA	14.52	10.06	5.98	0.41	0.00	ind	Ind
3-2	B	7/29/2014	10:58:50	NA	NA	14.52	14.25	25.67	1.77	14.25	13.19	2 -> 3
3-3	C	7/30/2014	12:39:20	15	4	14.52	6.69	Ind	Ind	0.00	ind	Ind
3-4	A	7/30/2014	12:44:47	15	4	14.52	15.06	7.30	0.50	0.00	15.75	1 on 3
3-5	C	7/30/2014	12:19:51	15	4	14.52	6.24	28.13	1.93	0.00	6.24	2 -> 3
3-6	C	7/30/2014	12:25:21	15	4	14.52	18.38	37.21	2.56	0.00	17.19	3
4-1	B	7/29/2014	10:47:45	NA	NA	14.52	14.18	Ind	Ind	0.00	ind	Ind
4-2	A	7/29/2014	10:38:37	NA	NA	14.52	14.38	45.17	3.11	14.38	14.38	2 -> 3
4-3	A	7/30/2014	10:25:39	15	4	14.52	16.06	Ind	Ind	16.06	16.06	3
4-4	C	7/30/2014	10:31:35	15	4	14.52	16.15	Ind	3.01	16.15	16.15	3
4-5	B	7/30/2014	11:09:49	15	4	14.52	14.98	50.82	3.50	0.00	15.00	2 on 3
4-6	A	7/30/2014	11:15:15	15	4	14.52	14.96	41.75	2.88	0.00	15.62	1 on 3
5-1	B	7/29/2014	10:29:19	NA	NA	14.52	15.94	48.71	3.36	0.00	16.13	3
5-2	A	7/29/2014	10:18:33	NA	NA	14.52	13.06	43.67	3.01	13.06	12.19	2 -> 3

Station	Replicate	Date	Time	Stop Collar Setting (in)	# of Weights (per side)	Calibration Constant	Penetration Mean (cm)	RPD Area (sq.cm)	Mean RPD (cm)	GAC depth (cm)	Mixing Zone Max Depth (cm)	Successional Stage
5-3	A	7/30/2014	10:43:14	15	4	14.52	2.28	7.53	0.52	2.28	ind	Ind
5-4	A	7/30/2014	8:30:15	16	4	14.52	8.84	21.85	1.51	8.84	8.84	2 -> 3
5-5	B	7/30/2014	9:51:56	15	4	14.52	10.11	33.00	2.27	0.00	10.11	3
5-6	C	7/30/2014	9:49:08	15	4	14.52	6.06	19.63	1.35	0.00	6.06	1 on 3
6-1	A	7/29/2014	9:52:54	NA	NA	14.52	12.84	Ind	Ind	0.00	ind	Ind
6-2	B	7/29/2014	9:30:54	NA	NA	14.52	12.62	3.39	0.23	12.62	8.12	1
6-3	D	7/30/2014	8:52:05	15	4	14.52	17.56	27.32	1.88	0.00	17.56	3
6-4	A	7/30/2014	10:07:36	15	4	14.52	16.55	Ind	Ind	0	16.55	Ind
6-5	A	7/30/2014	9:16:58	15	4	14.52	6.54	44.47	3.06	0.00	6.54	2
6-6	C	7/30/2014	9:25:54	15	4	14.52	8.29	37.26	2.57	0.00	8.29	1 on 3
7-1	B	7/29/2014	14:11:12	15	4	14.52	5.31	36.53	2.52	0.00	5.31	2 -> 3
7-2	B	7/29/2014	14:26:03	16	4	14.52	11.02	29.95	2.06	0.00	11.02	3
7-3	C	7/29/2014	14:41:14	16	4	14.52	8.21	34.48	2.38	0.00	8.21	2 on 3
7-4	A	7/30/2014	9:07:36	15	4	14.52	15.94	30.57	2.11	0.00	12.19	3
7-5	A	7/30/2014	9:12:37	15	4	14.52	4.68	35.39	2.44	0.00	4.68	2 on 3
7-6	B	7/30/2014	9:28:47	15	4	14.52	9.94	12.12	0.84	0.00	9.94	3
2-4_5	B	7/30/2014	14:20:17	15	4	14.52	15.13	13.55	0.93	0.00	6.06	1 -> 2
3-4_5	A	7/30/2014	12:14:18	15	4	14.52	11.44	40.84	2.81	0.00	11.44	3
4-4_5	B	7/30/2014	11:04:49	15	4	14.52	6.14	47.58	3.28	6.14	6.14	3
5-4_5	B	7/30/2014	9:57:48	15	4	14.52	6.06	25.57	1.76	6.06	6.06	2 -> 3
6_5-1	B	7/29/2014	10:11:37	NA	NA	14.52	12.71	Ind	Ind	0.00	ind	Ind
6_5-2	A	7/29/2014	10:03:55	NA	NA	14.52	4.10	0.00	0.00	4.10	ind	Ind
6_5-3	A	7/30/2014	8:12:53	16	4	14.52	5.47	Ind	ind	5.47	5.47	Ind
6_5-4	A	7/30/2014	8:25:48	16	4	14.52	15.29	18.36	1.27	IND	14.44	2 -> 3

Station	Replicate	Comment
1-1	B	silt sed; no GAC; thick layer of crab and mussel shells on surface; burrowing anemones; diver disturbance of SWI; transected burrows at depth
1-2	A	silt sed; no GAC; thick layer of crab and mussel shells on surface; diver disturbance of SWI; fecal pellets at SWI, relatively thick aRPD, transected burrows at depth
1-3	A	silty sed; no GAC; poor penetration due to shell armoring; transected burrows at depth
1-4	C	silt sed; no GAC; Draw down of tube worm tubes by camera prism, aRPD distorted by tube dragdown, evidence of Stage 3 at depth
1-5	C	Silt-clay; no GAC, small tubes @ SWI, evidence of transected burrows at depth, low density of deposit feeders present
1-6	A	Silt-clay, no GAC, transected burrows at depth
2-1	A	Silt-clay; no GAC; thick layer of shell fragments on surface; transected burrows at depth.
2-2	B	GAC pebbles and shell fragments on surface; hints of relict aRPD at lower left; profile disturbed by diver movement
2-3	A	Shell armoring over silt clay; former GAC location, so natural sedimentation has obliterated earlier GAC signal
2-4	B	Relict aRPD at depth, indicating GAC layer still in the process of being re-worked into the sediments; transected burrows at depth, no GAC pebbles visible
2-5	B	Silt clay with slight hint of remnant historic GAC layer at depth, but no obvious visible surface layer (completely reworked); transected burrows at depth.
2-6	A	Silt-clay with evidence of reworking at depth ; no hint of GAC presence; bioturbation exceeds prism penetration depth
3-1	A	Silt clay with thick surface armoring of shell hash; no GAC, cross-sectional detail disturbed by diver movement of prism; streaks on window from grease on diver glove
3-2	B	Silt-clay with shell armoring and GAC pebbles on surface; GAC layer exceeds prism penetration depth; cross-sectional detail disrupted by diver-movement of prism
3-3	C	Shell and cobble debris with disturbed profile from dragdown of surface armoring; impossible to measure aRPD, mixing depth, or successional stage in all 3 replicates collected at site.
3-4	A	Silt-clay with squid egg case on surface, transected burrows at depth with bioturbation exceeding prism penetration depth, no trace of GAC
3-5	C	Silty very fine sand with portions of polychaete visible against faceplate; bioturbation exceeds prism penetration depth.
3-6	C	Silty very fine sand over silt-clay; homogeneous subsurface texture, no trace of GAC, transected burrows at depth
4-1	B	Silt clay with thick surface armoring of shell hash; no GAC, cross-sectional detail disturbed by diver movement of prism; streaks on window from grease on diver glove
4-2	A	Silt clay with GAC particles at depth, GAC gravel near surface; large mussel and crab shell fragments on surface; small-medium shell fragments at depth; SWI disturbed by diver movement of prism.
4-3	A	Silt clay with thick surface layer of GAC particles and shells; reduced sediment at depth, both bioturbation & GAC layer exceed prism penetration depth
4-4	C	Silt clay with surface layer of GAC particles and shell fragments; reduced sediment at depth, both bioturbation & GAC layer exceed prism penetration depth
4-5	B	Silty fine sand over silt clay, no evidence of GAC, portions of polychaetes visible against faceplate, shallow burrowing bivalves in upper 3 cm
4-6	A	Silty fine sand over silt clay, no evidence of GAC, portions of polychaetes visible against faceplate, bioturbation exceeds prism penetration depth
5-1	B	Silt-clay; no GAC; thick layer of shell fragments on surface; transected burrows at depth; bioturbation exceeds prism penetration depth
5-2	A	Silt-clay with GAC gravel and some GAC particles visible; GAC exceeds prism penetration; dense mussel and crab shell on surface; a little diver disturbance of SWI

Station	Replicate	Comment
5-3	A	poor penetration, GAC greater than prism penetration depth
5-4	A	Sandy silt with GAC greater than prism penetration depth; both anemones and tube worms at surface
5-5	B	Silty fine sand with no GAC, transected burrows at depth, some shell fragments & anemones at SWI; bioturbation exceeds prism penetration depth
5-6	C	Silty fine to medium sand with no GAC; biorturbation exceeds prism penetration depth; shell fragments armoring surface
6-1	A	Sandy silt with thick layer of shell armoring on surface; detail in cross-sectional profile lost because of sampling artifact (diver prism motion)
6-2	B	Sandy silt with thick layer of GAC pebbles; GAC layer exceeds prism penetration depth; subsurface sediments extremely reduced; fine-scale structure obscured by prism movement by diver.
6-3	D	No GAC visible, but Beggiatoa on surface and evidence of transected burrows at depth, extending beyond prism penetration depth; high within-station variability among replicate images.
6-4	A	Sandy silt with surface disturbed/profile distorted from dragdown of anemones; Mussel shell in background, bioturbation appears to exceed prism penetration depth.
6-5	A	Silty fine sand, no GAC present; portions of polychaetes visible against faceplate at depth
6-6	C	Silty fine sand, no GAC present; portions of polychaetes visible against faceplate at depth, bioturbation exceeds prism penetration depth
7-1	B	Poorly sorted silty medium to coarse sand; no GAC, bioturbation exceeds prism penetration depth
7-2	B	Silty fine sand with no GAC, transected burrows at depth, shell/cobble armoring at SWI with some debris; bioturbation exceeds prism penetration depth
7-3	C	Silty fine sand with no GAC, transected burrows at depth, shell fragments at SWI; bioturbation exceeds prism penetration depth; portions of worms visible against faceplate at depth
7-4	A	Silty fine sand over silt clay; appears to be depositional layer (not GAC) of ca. 8-9 cm; some drag-down of sabellid tube on right edge of image
7-5	A	Silty fine to medium sand with no GAC; bioturbation exceeds prism penetration depth; some shell fragments on surface
7-6	B	Silty fine sand with no GAC; transected burrows at depth
2-4_5	B	Sandy silt with no apparent GAC, thin redox, looks like some activated carbon material at depth
3-4_5	A	Some shell fragments on surface, silty find sand, no GAC, subsurface organisms visible against faceplate at depth, bioturbation exceeds prism penetration depth
4-4_5	B	Bioturbation & GAC extends beyond penetration depth, GAC pebbles visible on surface, some remnants of activated carbon at depth; excellent recolonization recovery
5-4_5	B	Bioturbation & GAC extends beyond penetration depth, GAC pebbles visible on surface, reduced sediment from activated carbon at depth; excellent recolonization recovery
6_5-1	B	Silty sand & shell hash throughout entire profile, fine structure disturbed by diver artifact - no GAC present
6_5-2	A	All GAC with reduced sediment; too much disturbance to determine successional status or bioturbation mixing depth -- recolonization does look delayed compared with other stations.
6_5-3	A	All GAC but with well-oxygenated sediment (stark contrast to previous station); too many GAC pebbles to determine successional status
6_5-4	A	Sandy silt-clay with traces of activated carbon at depth; no distinct GAC layer with successful recolonization compared to previous survey

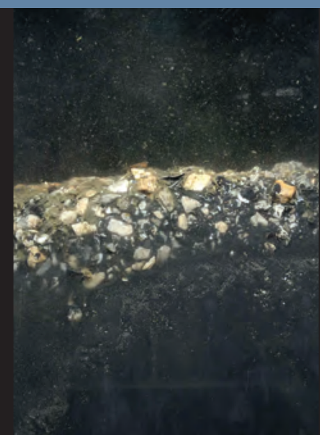
December 2015

Sediment Profile Imaging Report

Demonstration of *in-situ* Treatment of Contaminated Sediments with Reactive Amendments: Post-Cap Survey #4







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Work Order #3

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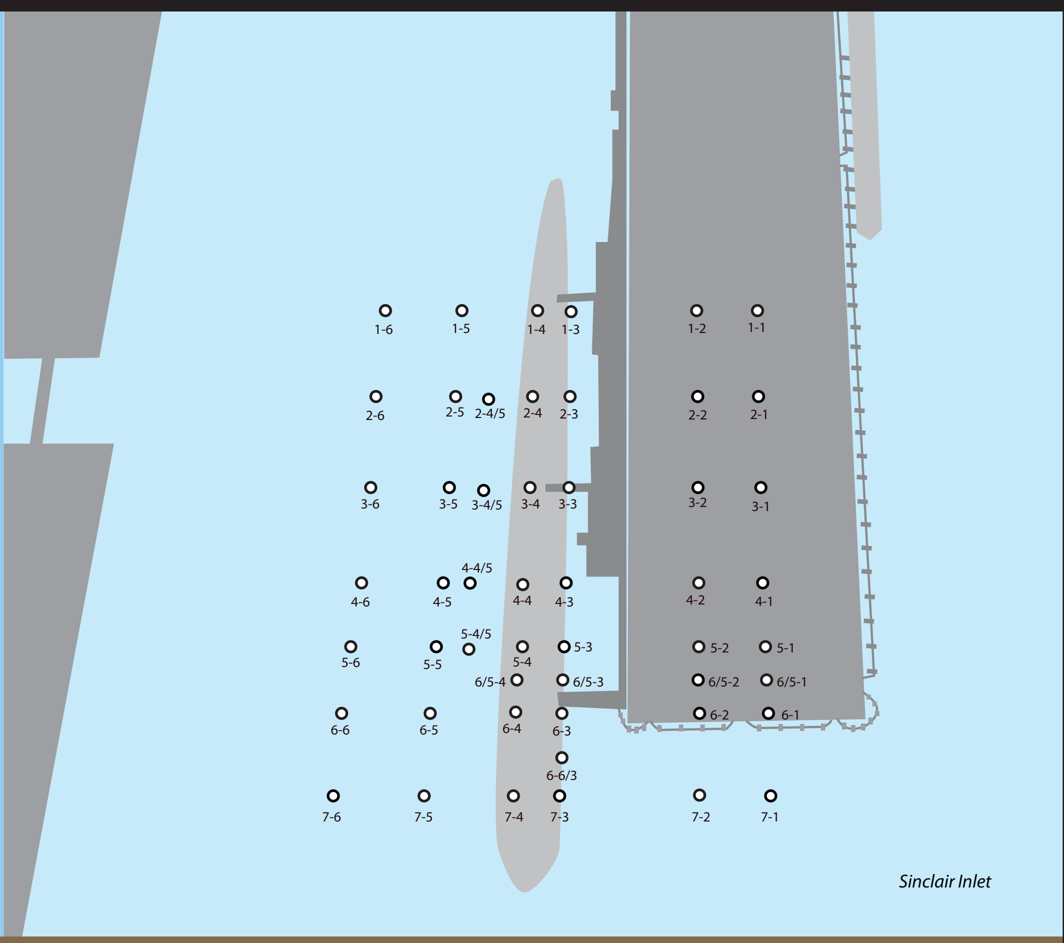

Sediment Profile Imaging Report

DEMONSTRATION OF *IN-SITU* TREATMENT OF CONTAMINATED SEDIMENTS WITH REACTIVE AMENDMENTS: POST CAP SURVEY #4

Prepared for

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1.0 INTRODUCTION

As part of a multidisciplinary effort to investigate the feasibility of treating contaminated sediments in active Department of Defense (DoD) harbors, Germano & Associates, Inc. (G&A) performed a Sediment Profile Imaging (SPI) survey around Pier 7 at the Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF) Bremerton site. The purpose of this SPI survey was to continue to monitor recolonization and benthic habitat conditions at a total of 51 stations following placement of a reactive amendment cap placed on the sediment surface. This was the fourth and final post-cap monitoring survey performed as part of this multidisciplinary demonstration research project.

2.0
MATERIALS AND METHODS

Between October 14-16, 2012, 141 tons of AquaGate +PAC^{TM} were placed in the target area for remediation under and around Pier 7 at PSNS & IMF Bremerton site (Johnston et al. 2013). The AquaGate +PAC^{TM} consisted of an aggregate (limestone pebble) core surrounded with a mixture of powdered activated carbon (PAC) held together by a clay (bentonite) binder that was designed to release from aggregate once placed on the sea floor (Johnston et al. 2013). A pre-placement baseline SPI survey was conducted Aug 16-17, 2012 (G&A 2013a) and post-placement SPI surveys were conducted 2 weeks (Oct 30-31, 2012; G&A 2013b), 10 months (Aug 13-14, 2013; G&A 2014a), 22 months (July 29-30, 2014; G&A 2014b), and 34 months (July 27-28, 2015; this report) after placement. For each of these surveys, scientists from G&A collected a series of sediment profile images at a total of 42 stations and mapped the presence and thickness of the cap layer. During the 10 month and 22 month monitoring surveys, scientists from G&A collected sediment profile images from the same 42 stations as the baseline and initial post-cap surveys in August 2012 October 2012, respectively, as well as an additional 8 stations (G&A 2014b); for this last survey, 1 additional station (Station 6/6-3) was added to the original station array for a grand total of 51 stations (Figure 1). The primary objective of the post-cap surveys was to monitor the recolonization of the cap as well as the active reworking of the reactive amendment into the sediment by resident infauna. For all surveys, two different versions of an Ocean Imaging Systems Model 3731 sediment profile camera were used; a standard SPI system using a surrounding frame that was deployed from a vessel (Figure 2), and a hand-held aluminum SPI system (Figure 3) deployed by PSNS & IMF divers for stations that were located under the pier and inaccessible for sampling with a vessel.

SPI was developed almost four decades ago as a rapid reconnaissance tool for characterizing physical, chemical, and biological seafloor processes and has been used in numerous seafloor surveys throughout North America, Asia, Europe, and Africa (Rhoads and Germano 1982, 1986, 1990; Revelas et al. 1987; Diaz and Schaffner, 1988; Valente et al. 1992; Germano et al. 2011). The sediment profile camera works like an inverted periscope. A Nikon D7100 24.2-megapixel Single Lens Reflex (SLR) camera with two 32-gigabyte secure digital (SD) cards is mounted horizontally inside a watertight housing on top of a wedge-shaped prism. The prism has a Plexiglas® faceplate at the front with a mirror placed at a 45° angle at the back. The camera lens looks down at the mirror, which is reflecting the image from the faceplate. The prism has an internal strobe mounted inside at the back of the wedge to provide illumination for the image; this chamber is filled with distilled water, so the camera always has an optically clear path. This wedge assembly is mounted on a moveable carriage within a stainless steel frame. The frame is lowered to the seafloor on a winch wire, and the tension on the wire keeps the prism in its “up” position. When the frame comes to rest on the seafloor, the winch wire goes slack

(see Figure 2) and the camera prism descends into the sediment at a slow, controlled rate by the dampening action of a hydraulic piston so as not to disturb the sediment-water interface. On the way down, it trips a trigger that activates a time-delay circuit of variable length (operator-selected) to allow the camera to penetrate the seafloor before any image is taken. The knife-sharp edge of the prism transects the sediment, and the prism penetrates the bottom. The strobe is discharged after an appropriate time delay to obtain a cross-sectional image of the upper 20 cm of the sediment column. The resulting images give the viewer the same perspective as looking through the side of an aquarium half-filled with sediment. After the first image is obtained at the first location, the camera is then raised up about 2 to 3 meters off the bottom to allow the strobe to recharge; a wiper blade mounted on the frame removes any mud adhering to the faceplate. The strobe recharges within 5 seconds, and the camera is ready to be lowered again for a replicate image. Surveys can be accomplished rapidly by “pogo-sticking” the camera across an area of seafloor while recording positional fixes on the surface vessel.

The hand-held SPI system (Figure 3) works on the same design, except that there is no time delay once the watertight switch is activated by the diver after the prism is inserted into the sediment. There is no wiper blade on the hand-held system, so the diver needs to clean the faceplate of the camera prism manually with a scrub brush after each image is taken.

Two types of adjustments to the SPI system are typically made in the field: physical adjustments to the chassis stop collars on the frame-deployed system or adding/subtracting lead weights to the chassis to control penetration in harder or softer sediments, and electronic software adjustments to the Nikon D7100 to control camera settings. Camera settings (f-stop, shutter speed, ISO equivalents, digital file format, color balance, etc.) are selectable through a water-tight USB port on the camera housing and Nikon Control Pro® software. At the beginning of the survey, the time on both of the sediment profile cameras’ internal data loggers was synchronized with the clock on the sampling vessel to local time. Details of the camera settings for each digital image are available in the associated parameters file embedded in the electronic image file; for this survey, the ISO-equivalent was set at 640. The additional camera settings used were as follows: shutter speed was 1/250, f9, white balance set to flash, color mode to Adobe RGB, sharpening to none, noise reduction off, and storage in compressed raw Nikon Electronic Format (NEF) files (approximately 30 MB each). Electronic files were converted to high-resolution jpeg (14-bit) format files using Nikon Capture NX2® software (Version 2.4.7.).

Typically, three replicate images were taken at each station at the vessel-deployed frame stations, while 2 replicate images were taken by the divers at each of the under-pier stations; each SPI replicate is identified by the time recorded on the digital image file in the camera and in the field log on the vessel. The SD card was immediately surrendered at the completion of the survey to PSNS & IMF for review and approval for public distribution. The unique time stamp on the digital image was then cross-checked with the

time stamp recorded in the written sample logs. After the images were cleared for public release, they were re-named with the appropriate station name based on the time stamp on each image.

Test exposures of the Kodak® Color Separation Guide (Publication No. Q-13) were made on deck at the beginning of the survey to verify that all internal electronic systems were working to design specifications and to provide a color standard against which final images could be checked for proper color balance. A spare camera and charged battery were carried in the field at all times to insure uninterrupted sample acquisition. After deployment of the camera at each station, the frame counter was checked to make sure that the requisite number of replicates had been taken. In addition, a prism penetration depth indicator on the camera frame was checked to verify that the optical prism had actually penetrated the bottom to a sufficient depth. If images were missed (frame counter indicator or verification from digital download) or the penetration depth was insufficient (penetration indicator), chassis stops were adjusted and/or weights were added or removed, and additional replicate images were taken. Changes in prism weight amounts, the presence or absence of mud doors, and chassis stop positions were recorded for each replicate image.

Following completion of the field operations, the raw NEF image files were converted to high-resolution Joint Photographic Experts Group (jpeg) format files using the minimal amount of image file compression. Once converted to jpeg format, the intensity histogram (RGB channel) for each image was adjusted in Adobe Photoshop® to maximize contrast without distortion. The jpeg images were then imported to Sigmascan Pro® (Aspire Software International) for image calibration and analysis. Calibration information was determined by measuring 1-cm gradations from the Kodak® Color Separation Guide. This calibration information was applied to all SPI images analyzed. Linear and area measurements were recorded as number of pixels and converted to scientific units using the calibration information.

Measured parameters were recorded on a Microsoft® Excel© spreadsheet. G&A's senior scientist (Dr. J. Germano) subsequently checked all these data as an independent quality assurance/quality control review of the measurements before final interpretation was performed.

2.1 Measuring, Interpreting, and Mapping SPI Parameters

2.1.1 Prism Penetration Depth

The SPI prism penetration depth was measured from the bottom of the image to the sediment-water interface. The area of the entire cross-sectional sedimentary portion of

the image was digitized, and this number was divided by the calibrated linear width of the image to determine the average penetration depth.

Prism penetration is a noteworthy parameter; if the number of weights used in the camera is held constant throughout a survey, the camera functions as a static-load penetrometer. Comparative penetration values from sites of similar grain size give an indication of the relative water content of the sediment. Highly bioturbated sediments and rapidly accumulating sediments tend to have the highest water contents and greatest prism penetration depths.

The depth of penetration also reflects the bearing capacity and shear strength of the sediments. Overconsolidated or relic sediments and shell-bearing sands resist camera penetration. Highly bioturbated, sulfitic, or methanogenic muds are the least consolidated, and deep penetration is typical. Seasonal changes in camera prism penetration have been observed at the same station in other studies and are related to the control of sediment geotechnical properties by bioturbation (Rhoads and Boyer 1982). The effect of water temperature on bioturbation rates appears to be important in controlling both biogenic surface relief and prism penetration depth (Rhoads and Germano 1982).

2.1.2 Thickness of Depositional Layers

Because of the camera's unique design, SPI can be used to detect the thickness of dredged material and depositional layers (like the reactive amendment). SPI is effective in measuring layers ranging in thickness from 1 mm to 20 cm (the height of the SPI optical window). During image analysis, the thickness of the newly deposited sedimentary layers can be determined by measuring the distance between the pre- and post-placement sediment-water interface. Recently deposited material is usually evident because of its unique optical reflectance and/or color relative to the underlying material representing the pre-operational surface. Also, in most cases, the point of contact between the two layers is clearly visible as a textural change in sediment composition, facilitating measurement of the thickness of the newly deposited layer. In this study, the presence of the aggregate core and/or activated (black) carbon were used to indicate the presence of the reactive amendment.

2.1.3 Apparent Redox Potential Discontinuity Depth

Aerobic near-surface marine sediments typically have higher reflectance relative to underlying hypoxic or anoxic sediments. Surface sands washed free of mud also have higher optical reflectance than underlying muddy sands. These differences in optical reflectance are readily apparent in SPI images; the oxidized surface sediment contains particles coated with ferric hydroxide (an olive or tan color when associated with particles), while reduced and muddy sediments below this oxygenated layer are darker, generally gray to black (Fenchel 1969; Lyle 1983). The boundary between the colored

ferric hydroxide surface sediment and underlying gray to black sediment is called the apparent redox potential discontinuity (aRPD).

The depth of the aRPD in the sediment column is an important time-integrator of dissolved oxygen conditions within sediment porewaters. In the absence of bioturbating organisms, this high reflectance layer (in muds) will typically reach a thickness of 2 mm below the sediment-water interface (Rhoads 1974). This depth is related to the supply rate of molecular oxygen by diffusion into the bottom and the consumption of that oxygen by the sediment and associated microflora. In sediments that have very high sediment oxygen demand (SOD), the sediment may lack a high reflectance layer even when the overlying water column is aerobic.

In the presence of bioturbating macrofauna, the thickness of the high reflectance layer may be several centimeters. The relationship between the thickness of this high reflectance layer and the presence or absence of free molecular oxygen in the associated porewaters must be considered with caution. The actual RPD is the boundary or horizon that separates the positive reduction potential (Eh) region of the sediment column from the underlying negative Eh region. The exact location of this Eh = 0 boundary can be determined accurately only with microelectrodes; hence, the relationship between the change in optical reflectance, as imaged with the SPI camera, and the actual RPD can be determined only by making the appropriate *in situ* Eh measurements. For this reason, the optical reflectance boundary, as imaged, was described in this study as the "apparent" RPD and it was mapped as a mean value. In general, the depth of the actual Eh = 0 horizon will be either equal to or slightly shallower than the depth of the optical reflectance boundary (Rosenberg et al., 2001). This is because bioturbating organisms can mix ferric hydroxide-coated particles downward into the bottom below the Eh = 0 horizon. As a result, the mean aRPD depth can be used as an estimate of the depth of porewater exchange, usually through porewater irrigation (bioturbation). Biogenic particle mixing depths can be estimated by measuring the maximum and minimum depths of imaged feeding voids in the sediment column. This parameter represents the particle mixing depths of head-down feeders, mainly polychaetes.

The rate of depression of the aRPD within the sediment is relatively slow in organic-rich muds, on the order of 200 to 300 micrometers per day; therefore this parameter has a long time constant (Germano and Rhoads 1984). The rebound in the aRPD is also slow (Germano 1983). Measurable changes in the aRPD depth using the SPI optical technique can be detected over periods of 1 or 2 months. This parameter is used effectively to document changes (or gradients) that develop over a seasonal or yearly cycle related to water temperature effects on bioturbation rates, seasonal hypoxia, SOD, and infaunal recruitment. Time-series RPD measurements following a disturbance can be a critical diagnostic element in monitoring the degree of recolonization in an area by the ambient benthos (Rhoads and Germano 1986).

The mean aRPD depth also can be affected by local erosion. The peaks of disposal mounds commonly are scoured by divergent flow over the mound. This scouring can wash away fines and shell or gravel lag deposits, and can result in very thin surface oxidized layer. During storm periods, erosion may completely remove any evidence of the aRPD (Fredette et al. 1988).

Another important characteristic of the aRPD is the contrast in reflectance at this boundary. This contrast is related to the interactions among the degree of organic loading, the bioturbation activity in the sediment, and the concentrations of bottom-water dissolved oxygen in an area. High inputs of labile organic material increase SOD and, subsequently, sulfate reduction rates and the associated abundance of sulfide end products. This results in more highly reduced, lower-reflectance sediments at depth and higher aRPD contrasts. In a region of generally low aRPD contrasts, images with high aRPD contrasts indicate localized sites of relatively large inputs of organic-rich material such as phytoplankton, other naturally-occurring organic detritus, dredged material, or sewage sludge.

Because the determination of the aRPD requires discrimination of optical contrast between oxidized and reduced particles, it is difficult, if not impossible, to determine the depth of the aRPD in well-sorted sands of any size that have little to no silt or organic matter in them (Painter et al, 2007). When using SPI technology on sand bottoms, little information other than grain-size, prism penetration depth, and boundary roughness values can be measured; while oxygen has no doubt penetrated the sand beneath the sediment-water interface just due to physical forcing factors acting on surface roughness elements (Ziebis et al., 1996; Huettel et al., 1998), estimates of the mean aRPD depths in these types of sediments are indeterminate with conventional white light photography.

2.1.4 Infaunal Successional Stage

The mapping of infaunal successional stages is readily accomplished with SPI technology. These stages are recognized in SPI images by the presence of dense assemblages of near-surface polychaetes and/or the presence of subsurface feeding voids; both may be present in the same image. Mapping of successional stages is based on the theory that organism-sediment interactions in fine-grained sediments follow a predictable sequence after a major seafloor perturbation. This theory states that primary succession results in “the predictable appearance of macrobenthic invertebrates belonging to specific functional types following a benthic disturbance. These invertebrates interact with sediment in specific ways. Because functional types are the biological units of interest..., our definition does not demand a sequential appearance of particular invertebrate species or genera” (Rhoads and Boyer 1982). This theory is presented in Pearson and Rosenberg (1978) and further developed in Rhoads and Germano (1982) and Rhoads and Boyer (1982).

This continuum of change in animal communities after a disturbance (primary succession) has been divided subjectively into four stages: Stage 0, indicative of a sediment column that is largely devoid of macrofauna, occurs immediately following a physical disturbance or in close proximity to an organic enrichment source; Stage 1 is the initial community of tiny, densely populated polychaete assemblages; Stage 2 is the start of the transition to head-down deposit feeders; and Stage 3 is the mature, equilibrium community of deep-dwelling, head-down deposit feeders (Figure 4).

After an area of bottom is disturbed by natural or anthropogenic events, the first invertebrate assemblage (Stage 1) appears within days after the disturbance. Stage 1 consists of assemblages of tiny tube-dwelling marine polychaetes that reach population densities of 10^4 to 10^6 individuals per m². These animals feed at or near the sediment-water interface and physically stabilize or bind the sediment surface by producing a mucous “glue” that they use to build their tubes. Sometimes deposited dredged material layers contain Stage 1 tubes still attached to mud clasts from their location of origin; these transported individuals are considered as part of the *in situ* fauna in our assignment of successional stages.

If there are no repeated disturbances to the newly colonized area, then these initial tube-dwelling suspension or surface-deposit feeding taxa are followed by burrowing, head-down deposit-feeders that rework the sediment deeper and deeper over time and mix oxygen from the overlying water into the sediment. The animals in these later-appearing communities (Stage 2 or 3) are larger, have lower overall population densities (10 to 100 individuals per m²), and can rework the sediments to depths of 3 to 20 cm or more. These animals “loosen” the sedimentary fabric, increase the water content in the sediment, thereby lowering the sediment shear strength, and actively recycle nutrients because of the high exchange rate with the overlying waters resulting from their burrowing and feeding activities.

In dynamic estuarine and coastal environments, it is simplistic to assume that benthic communities always progress completely and sequentially through all four stages in accordance with the idealized conceptual model depicted in Figure 4. Various combinations of these basic successional stages are possible. For example, secondary succession can occur (Horn, 1974) in response to additional labile carbon input to surface sediments, with surface-dwelling Stage 1 or 2 organisms co-existing at the same time and place with Stage 3, resulting in the assignment of a “Stage 1 on 3” or “Stage 2 on 3” designation.

While the successional dynamics of invertebrate communities in fine-grained sediments have been well-documented, the successional dynamics of invertebrate communities in sand and coarser sediments are not well-known. Subsequently, the insights gained from sediment profile imaging technology regarding biological community structure and dynamics in sandy and coarse-grained bottoms are fairly limited.

2.1.5 Biological Mixing Depth

During the past two decades, there has been a considerable emphasis on studying the effects of bioturbation on sediment geotechnical properties as well as sediment diagenesis (Ekman et al., 1981; Nowell et al., 1981; Rhoads and Boyer, 1982; Grant et al., 1982; Boudreau, 1986; 1994; 1998). However, an increasing focus of research is centering on the rates of contaminant flux in sediments (Reible and Thibodeaux, 1999; François et al., 2002; Gilbert et al., 2003), and the two parameters that affect the time rate of contaminant flux the greatest are erosion and bioturbation (Reible and Thibodeaux, 1999). The depth to which sediments are bioturbated, or the biological mixing depth, can be an important parameter for studying either nutrient or contaminant flux in sediments. While the apparent RPD is one potential measure of biological mixing depth, it is quite common in profile images to see evidence of biological activity (burrows, voids, or actual animals) well below the mean apparent RPD. Both the minimum and maximum linear distance from the sediment surface to both the shallowest and deepest feature of biological activity can be measured along with a notation of the type of biogenic structure measured. For this report, the maximum depth to which any biological activity was noted was measured and mapped.

3.0
RESULTS

While replicate images were taken at each station, the amount of disturbance caused by the diver-deployed system did not allow for reliable measurements of precision between the two replicate images, so only one replicate (the least disturbed) from each station sampled by divers was analyzed. The amount of debris in and around the piers coupled with the high density of shell fragments also created high variation in the penetration depth at the frame deployed stations, with cross-sectional sedimentary structures masked or destroyed by debris (natural or anthropogenic) being dragged down by the prism cutting blade. While a copy of all images collected was provided to the client, given the variation in image feature preservation (regardless of whether they were taken with the frame-deployed or diver-deployed system), and because this variation in cross-sectional structural appearance was not really indicative of natural variance in the measured parameters, the best image (least disturbed) from each station was analyzed. A complete set of all the summary data measured from each image is presented in Appendix A.

The results for some SPI parameters are sometimes indicated in the data appendix or on the maps as being “Indeterminate” (Ind). This is a result of the sediments being either: 1) too compact for the profile camera to penetrate adequately, preventing observation of surface or subsurface sediment features, 2) too soft to bear the weight of the camera, resulting in over-penetration to the point where the sediment/water interface was above the window (imaging area) on the camera prism (the sediment/water interface must be visible to measure most of the key SPI parameters like aRPD depth, penetration depth, and infaunal successional stage), or 3) the biogenic and sedimentary stratigraphic structure was compromised or destroyed by sampling artifacts caused by the divers inserting the prism into the sediment (either vibrating or wiggling the camera to achieve greater penetration, which allowed suspended sediment to collect in between the cross-sectional profile and the faceplate of the prism)

Although there are some uncertainties associated with SPI data as discussed above, the technology has been shown to be a powerful reconnaissance tool that can efficiently map gradients in sediment type, biological communities, or disturbances from physical forces or organic enrichment. The results and conclusions in this report are about dynamic processes that have been deduced from imaged structures; as such, they should be considered hypotheses available for further testing/confirmation.

3.1 PRISM PENETRATION DEPTH

Similar to the previous post-capping surveys, the sediments throughout the site ranged from sandy silt to muds with minor fractions of very fine to fine sand with high percentages of shell hash (stations under Pier 7; see Figure 5) to pebble and cobble armoring over silty sands (Figure 6). As noted from the results of the past two surveys, the addition of the AquaGate amendment also provided some surface armoring at select stations which impeded camera prism penetration (Figure 7). The overall site prism penetration depth was similar to the values measured in in the previous surveys, with values ranging from 1.3 to 18.8 cm, with an overall site average of 11.3 cm; the spatial distribution of mean penetration depth at all stations sampled is shown in Figure 8.

3.2 THICKNESS OF REACTIVE AMENDMENT LAYER

Measureable deposits of AquaGate+PAC™ could be seen at 17 stations this year; natural depositional processes and bioturbation of the sediments by the resident infauna will continue to mask the signature of this depositional layer over time. At those stations where the cap material could be detected, the mean thickness ranged from trace layers to 17.2 cm, with an average thickness of 9.7 cm at those 15 stations where not just a trace was detected but a distinct layer could be measured. The footprint of the visible cap is shown in Figure 9.

3.3 APPARENT REDOX POTENTIAL DISCONTINUITY DEPTH

The distribution of mean apparent RPD depths is shown in Figure 10; mean aRPD depths could not be measured at 10 of the stations because of sampling artifacts that caused distortions to the sediment profile and eliminated the possibility of any accurate measurements; cobble/shell or drag-down of surface megafauna (serpulid polychaetes or anemones) at 5 of the stations sampled with the frame camera either prevented sufficient prism penetration (cobble/shell stations) or distorted the structure of the sediment profile against the faceplate (faunal interference) to prevent measurement of an accurate aRPD measurement. While two stations still had no detectable aRPD present (compared with 8 stations in 2013 and 1 in 2014), the remaining stations had values ranging from 0.1 to 2.8 cm (Figure 10; Appendix A), with an overall site average of 1.1 cm.

3.4 INFAUNAL SUCCESSIONAL STAGE

The mapped distribution of infaunal successional stages is shown in Figure 11; the presence of Stage 3 taxa (larger infaunal deposit feeders) was evident at about half of the stations sampled. There was a noticeable retrograde in biological community status in the berthing area adjacent to the pier compared with the 2014 results (Figure 12). There were

seven stations where either prism penetration was too shallow or the profile was disturbed by sampling artifacts where infaunal successional status could not be determined. However, the biggest change in the biological community profile was the widespread presence of clusters of squid eggs on the bottom (Figure 13). These eggs were found at the majority of the stations sampled (Figure 14) and were most likely present at the 3 stations under the pier (Stations 4-2, 6/5-2, and 6-2 where it is indicated they are absent on the map) but in lower density and just not sampled by the camera.

3.5 MAXIMUM BIOLOGICAL MIXING DEPTH

The spatial distribution of the maximum depth to which any biological activity was seen in the study area is shown in Figure 15. As in the results from 2014, some of the deepest infaunal burrowing was found at those stations under the pier where the reactive amendment had been placed; maximum depth of biogenic activity ranged from 3.6 to 16.6 cm, with an overall site average of 10.3 cm.

4.0 DISCUSSION

The results from this final post-capping SPI survey showed what appear to be two apparently conflicting results: a retrograde in successional recovery at many of the stations compared with last year, but the establishment of large nursery area for pelagic squid (which usually occurs on relatively pristine bottom). The retrograde in successional recovery was not due to any sediment toxicity or degradation in water quality but more likely from physical disturbance (erosion of surface layers) from propwash energy originating from the ships using Pier 7. Many of the stations had the surface oxidized layer (which is the most easily eroded; Rhoads and Boyer 1982) missing. The gradual improvement and recovery following the initial disturbance of the capping operation, as predicted by soft-bottom successional research (Figure 4), will reoccur during periods of low pier traffic. The sudden appearance of high densities of squid eggs over much of the area (the first time this has been documented in the entire series of post-capping monitoring events) speaks volumes about the improvement in both water and sediment quality in the vicinity of Pier 7 since the amendment was placed.

The pattern of the optical signature of the reactive amendment slowly “disappearing” through natural depositional processes and bioturbational activity of the infaunal community that was documented in the last two post- capping surveys continued; initially, the presence of the reactive amendment could be detected at 19 stations. After 10 months post placement (2013 survey), the layer was only visible at 16 stations, and in this most recent survey (22 months post placement), the layer could only be detected in any measurable amounts at 15 stations (Figure 9). Over time and with the lack of continued severe disturbance, the appearance of Stage 3 (deposit-feeding) taxa as part of the resident infauna will not only continue to re-work the reactive amendment into the sediment, but they will also cause the depth of the aRPD to increase as well fostering increased nutrient exchange with the overlying water. The widespread establishment of a “squid nursery” on the bottom was the most compelling evidence that the activated cap amendment has made a definite improvement in overall habitat quality. All evidence to date from the SPI results show that the amendment worked as originally anticipated and has caused a definite improvement in the benthic community health at this active ship traffic site.

None of this work would have been possible without the cooperation and hard work by the PSNS & IMF Bremerton site divers. We would like to acknowledge both their attention to safety and skill in sample collection; it was truly a pleasure to have been able to collaborate with them and the rest of the PSNS & IMF Bremerton site personnel on this project over the past few years.

5.0
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FIGURES

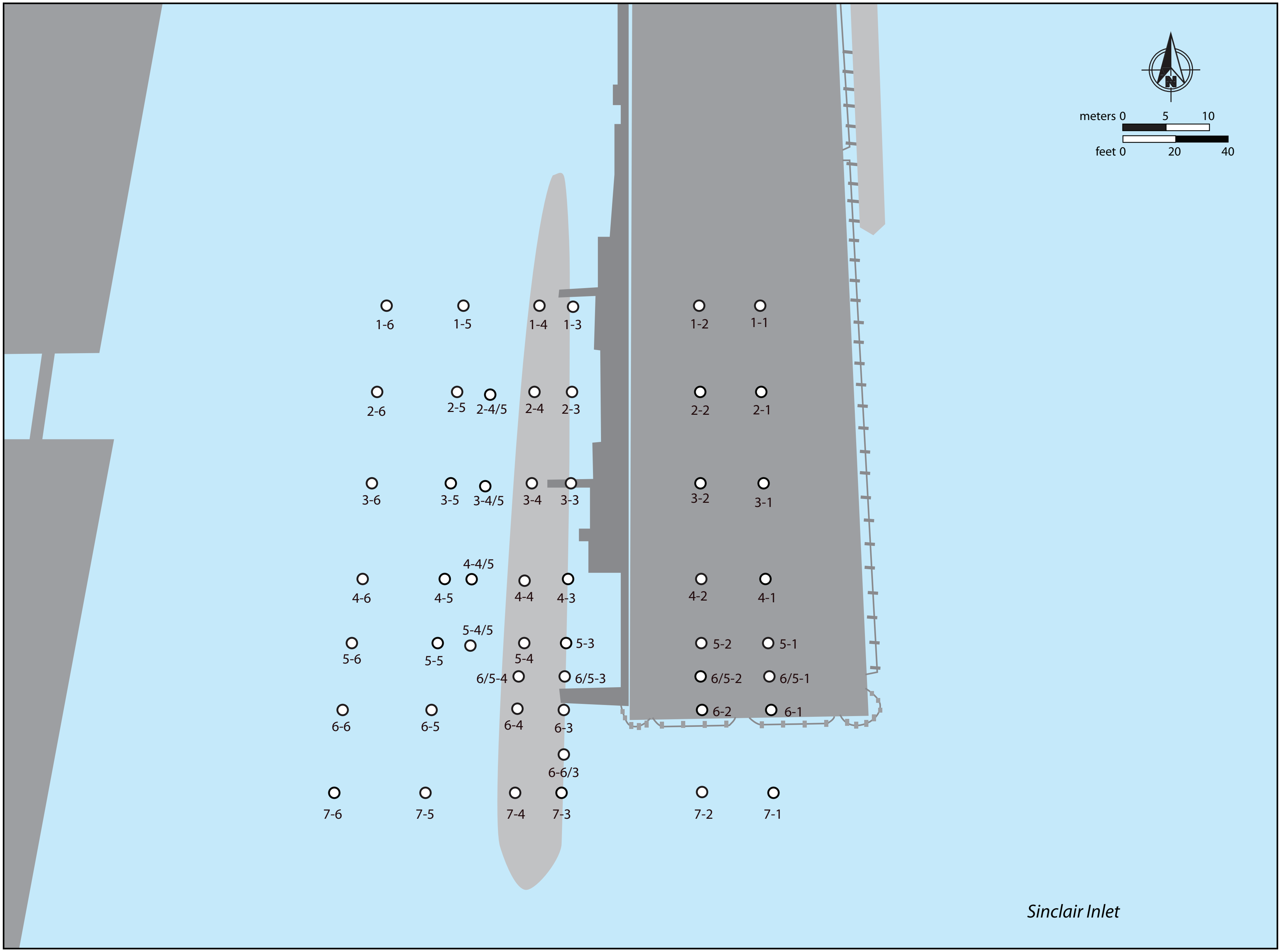


Figure 1: Location of SPI stations under and around Pier 7 at PSNS & IMF, Bremerton site, that were monitored in July 2015.

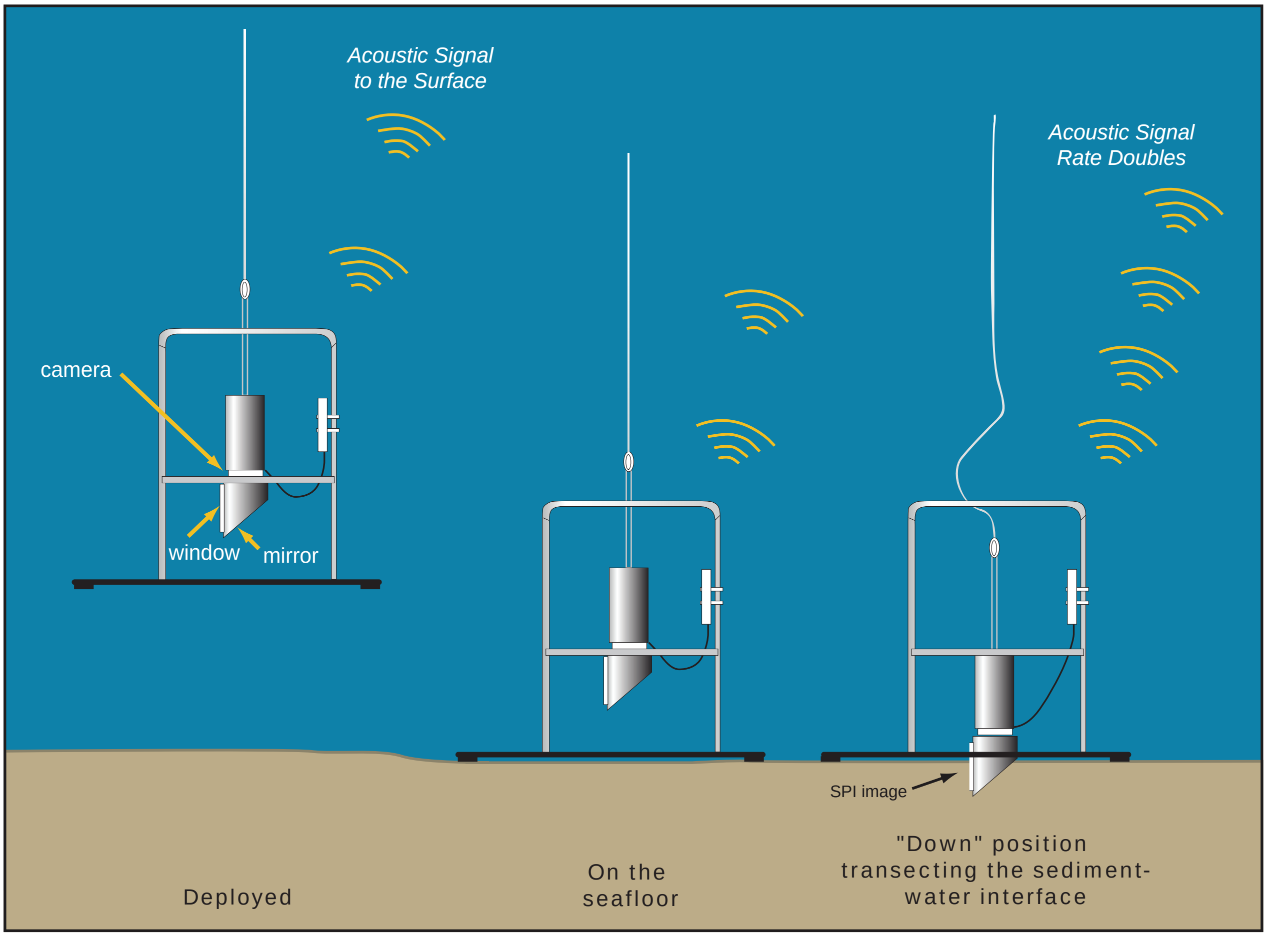


Figure 2: Deployment and operation of the SPI camera system.

Figure 3: The hand-held SPI system used by divers for all stations that were located underneath Pier 7 at PSNS & IMF, Bremerton site.

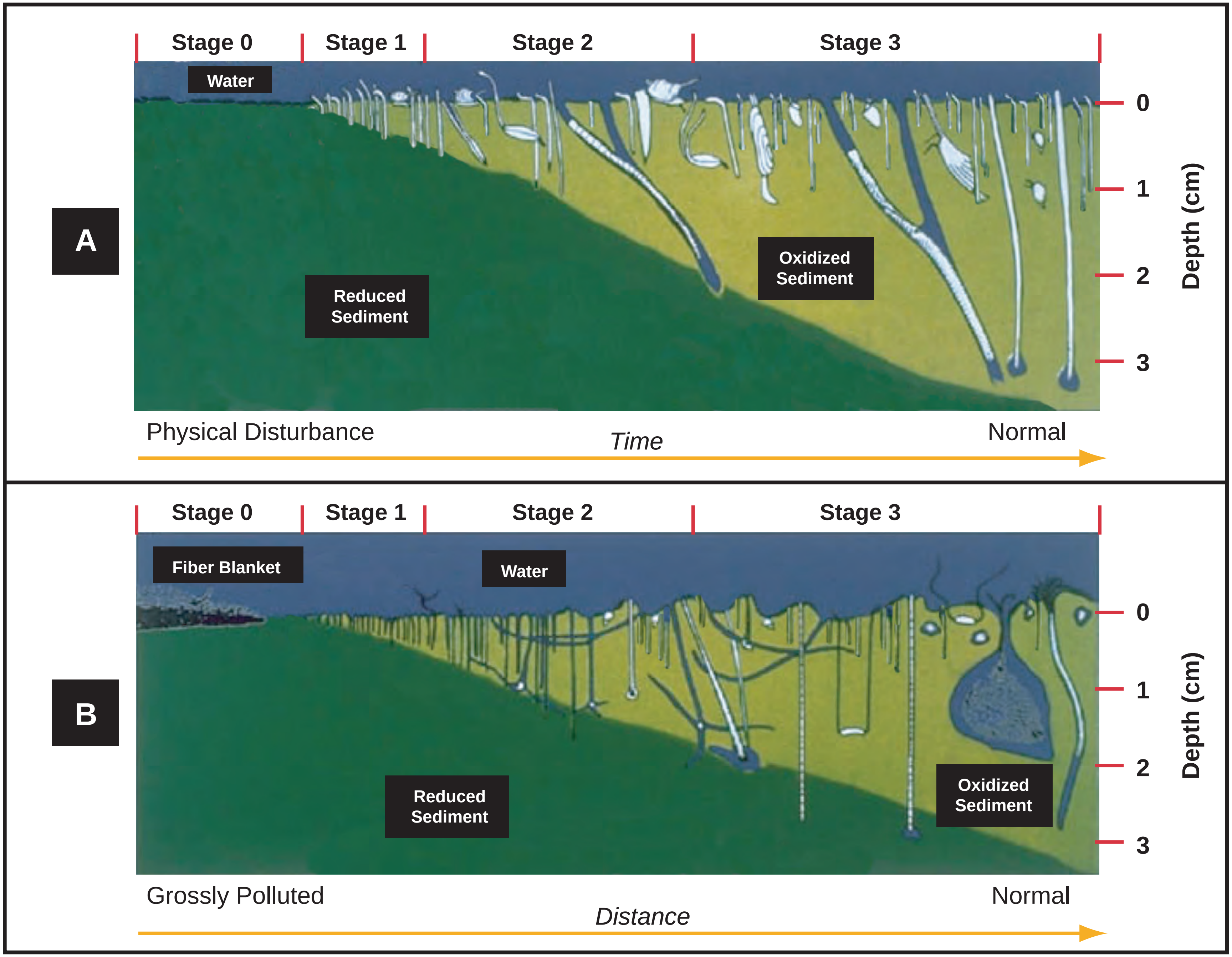


Figure 4: The stages of infaunal succession as a response of soft-bottom benthic communities to physical disturbance (top panel) or organic enrichment (bottom panel). From Rhoads and Germano, 1982.

1-3 4-1

Figure 5: These profile images from Station 1-3 and Station 4-1 show the different forms of surface armoring from shell hash (intact shells and larger fragments at Station 1-3 versus pulverized fragments at Station 4-1) found at many of the under pier stations. Scale: width of each profile image = 14.6 cm.

Figure 6: This profile image from Station 4-3 show an armoring of pebble and cobbles over silty very fine sand. Scale: width of profile image = 14.6 cm.

Figure 7: This profile image from Station 2-3 shows surface armoring from the pebbles used as a carrier vehicle for the activated carbon in the AquaGate amendment that was placed under and around Pier 7. Scale: width of profile image = 14.6 cm.

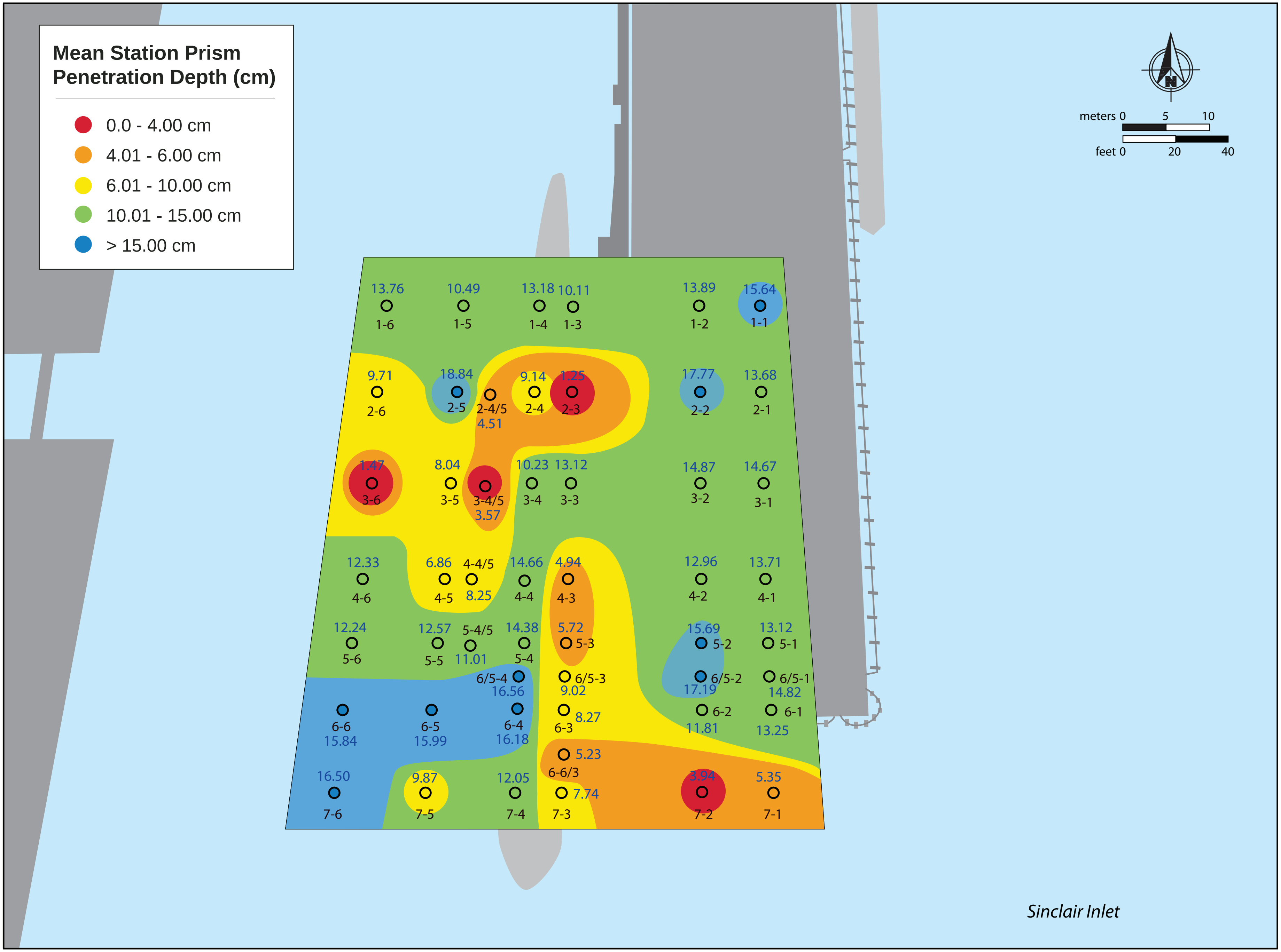


Figure 8: Spatial distribution of mean camera prism penetration depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in July 2015.

Figure 9: Spatial distribution and mean depositional thickness (cm) of the AquaGate +PAC™ material placed at locations in and around Pier 7 at the PSNS & IMF Bremerton site.

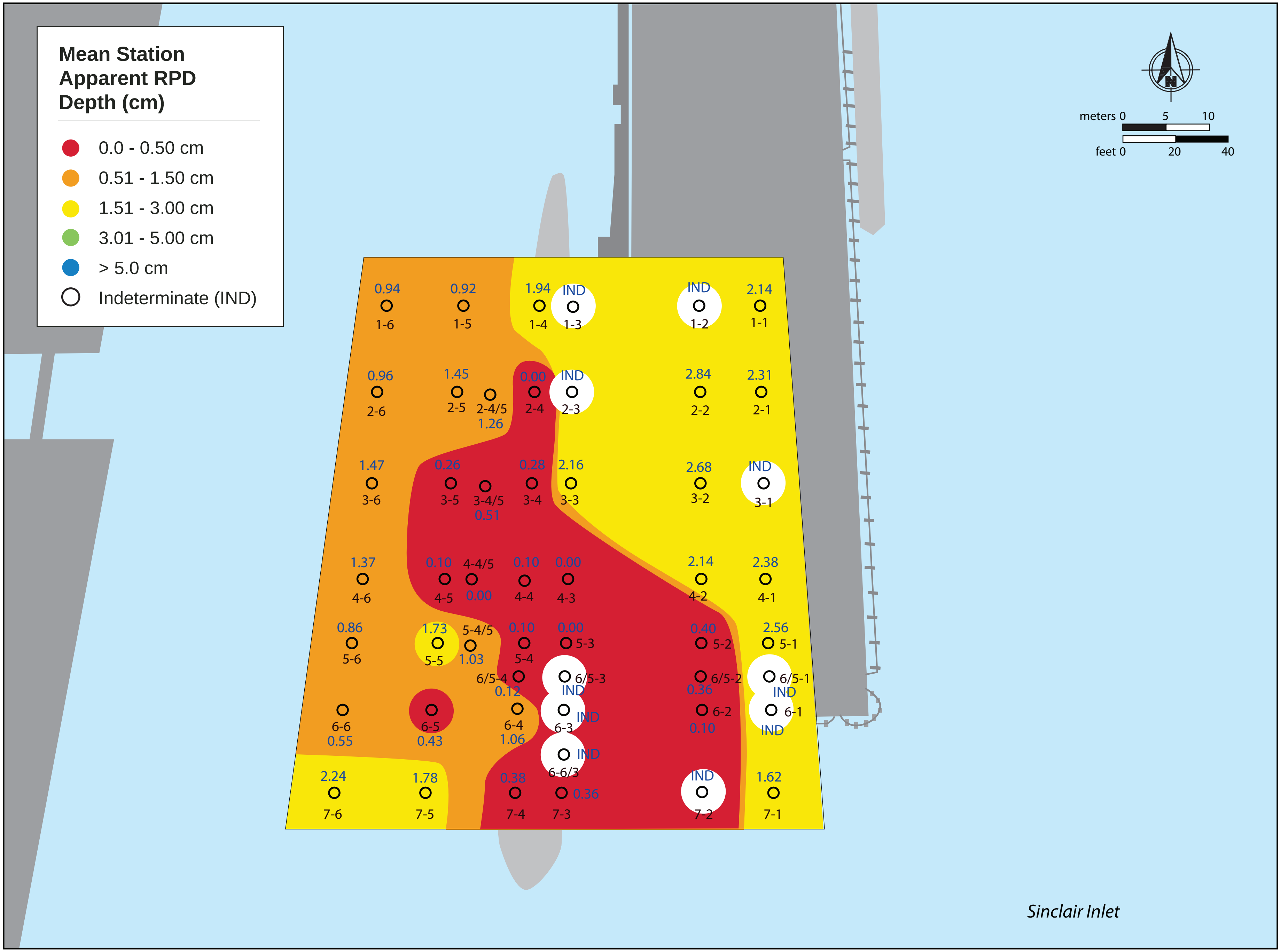


Figure 10: Spatial distribution of mean aRPD depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in July 2015.

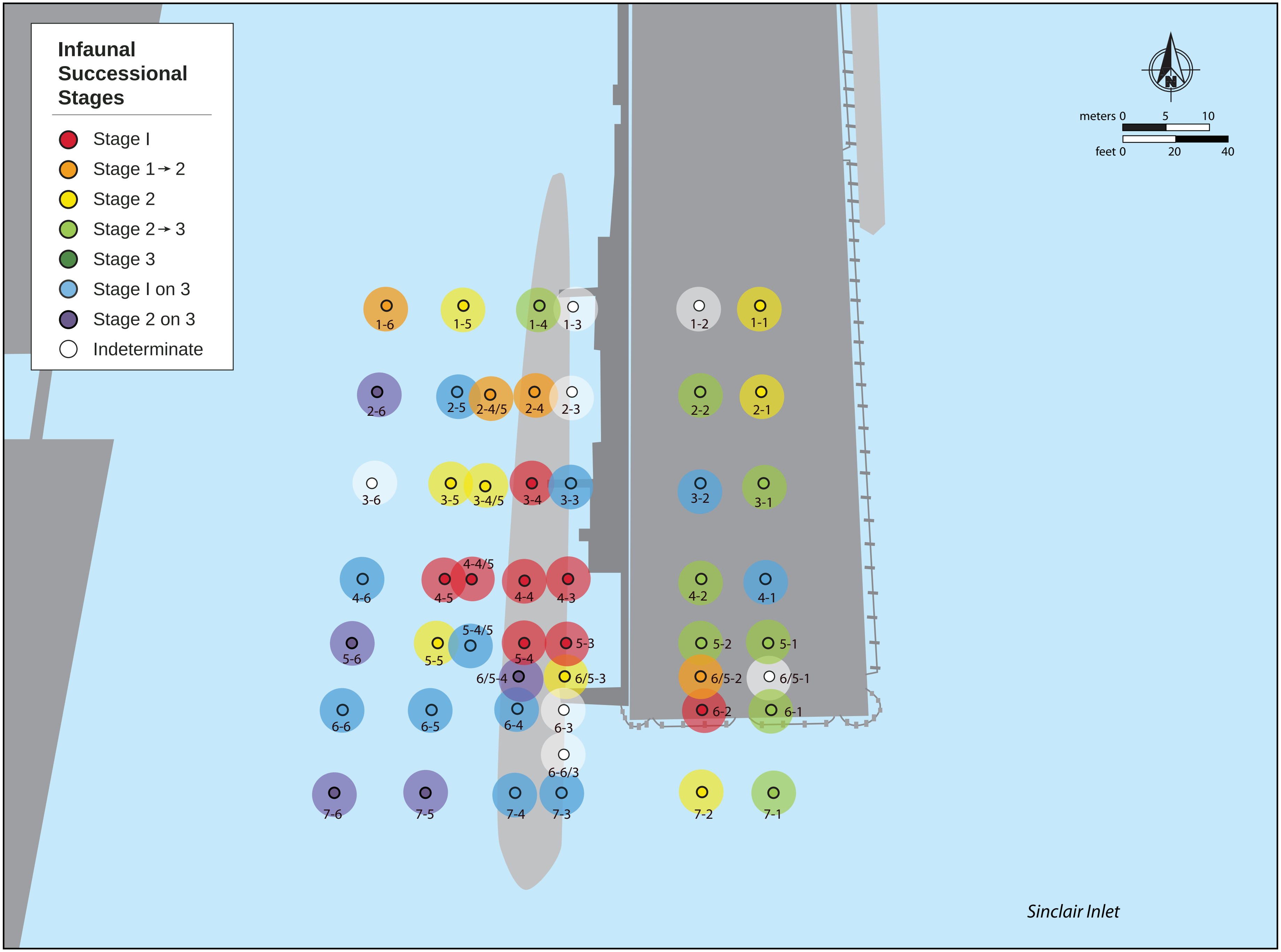


Figure 11: Spatial distribution of infaunal successional stages at Pier 7 at the PSNS & IMF Bremerton site in July 2015.

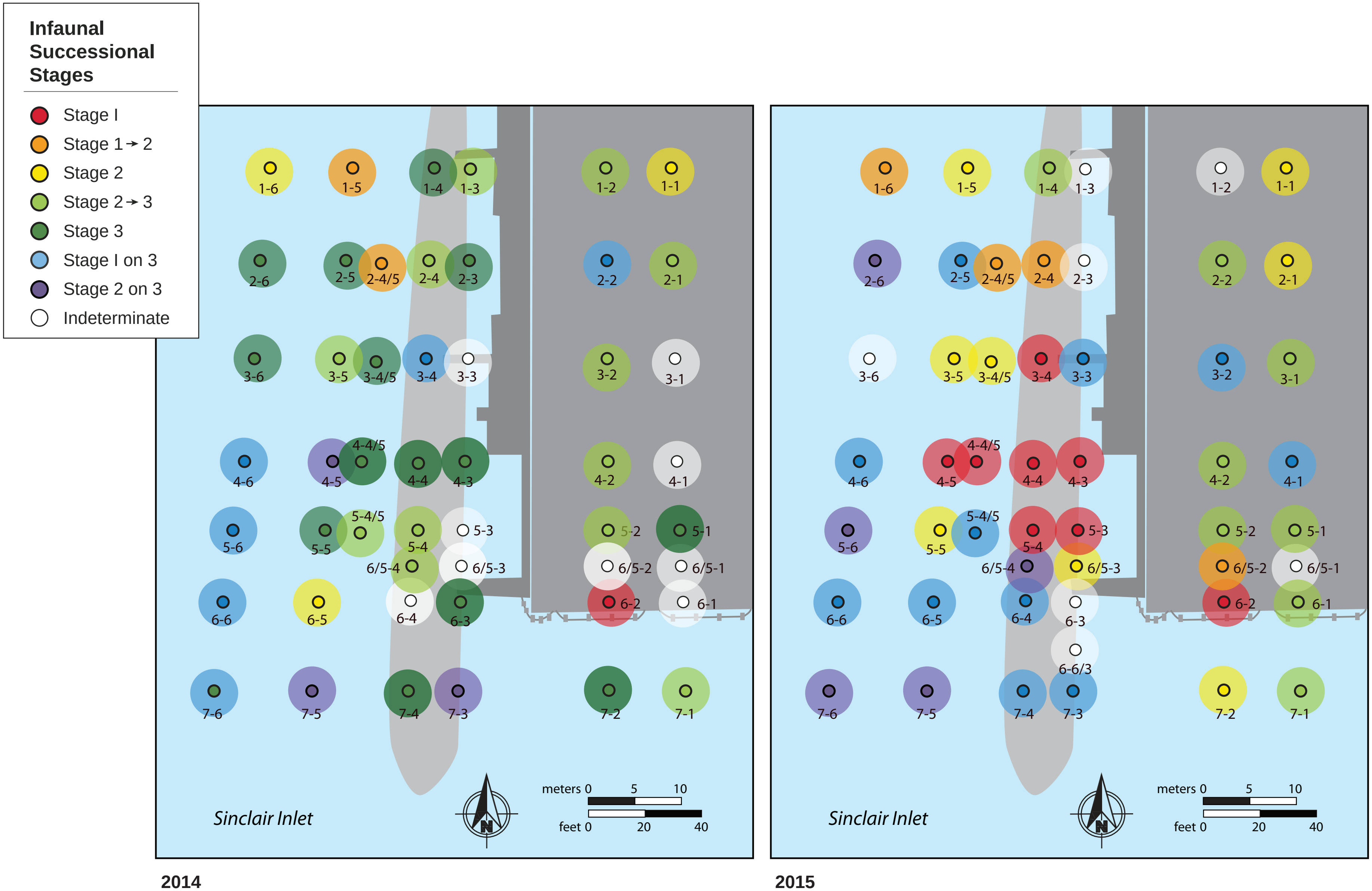


Figure 12: Comparison of infaunal successional status at stations in 2014 (left) and one year later from this most recent survey (right).

6/5-4 **3-5** **1-4**

Figure 13: These profile images from Station 6/5-4 (left), Station 3-5 (center), and Station 1-4 (right) show examples of the squid egg clusters that were found throughout the site. Scale: width of each profile image = 14.6 cm.

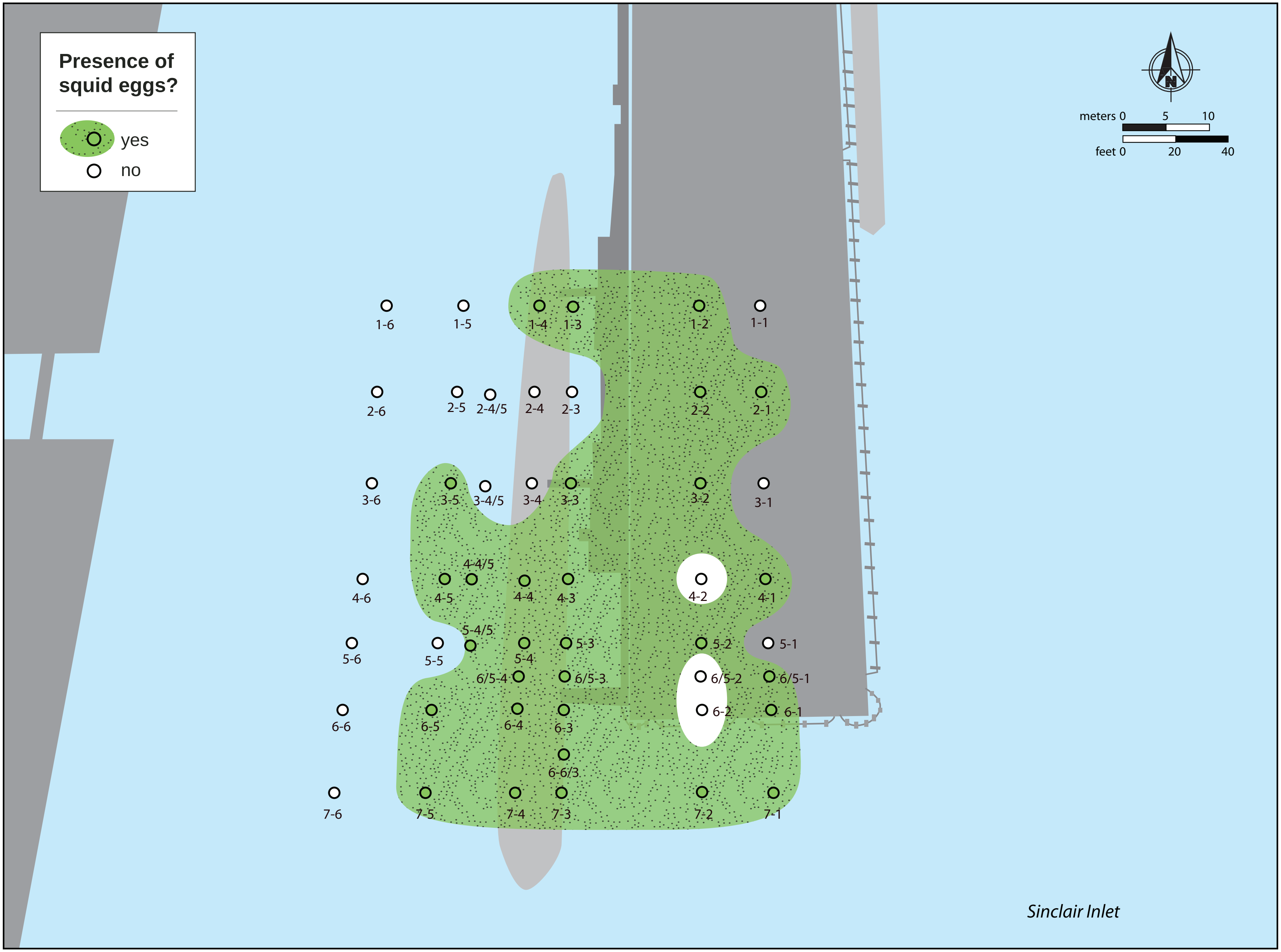


Figure 14: Spatial distribution of the presence of squid eggs on the sediment surface under and around Pier 7 at the PSNS & IMF Bremerton site in July 2015.

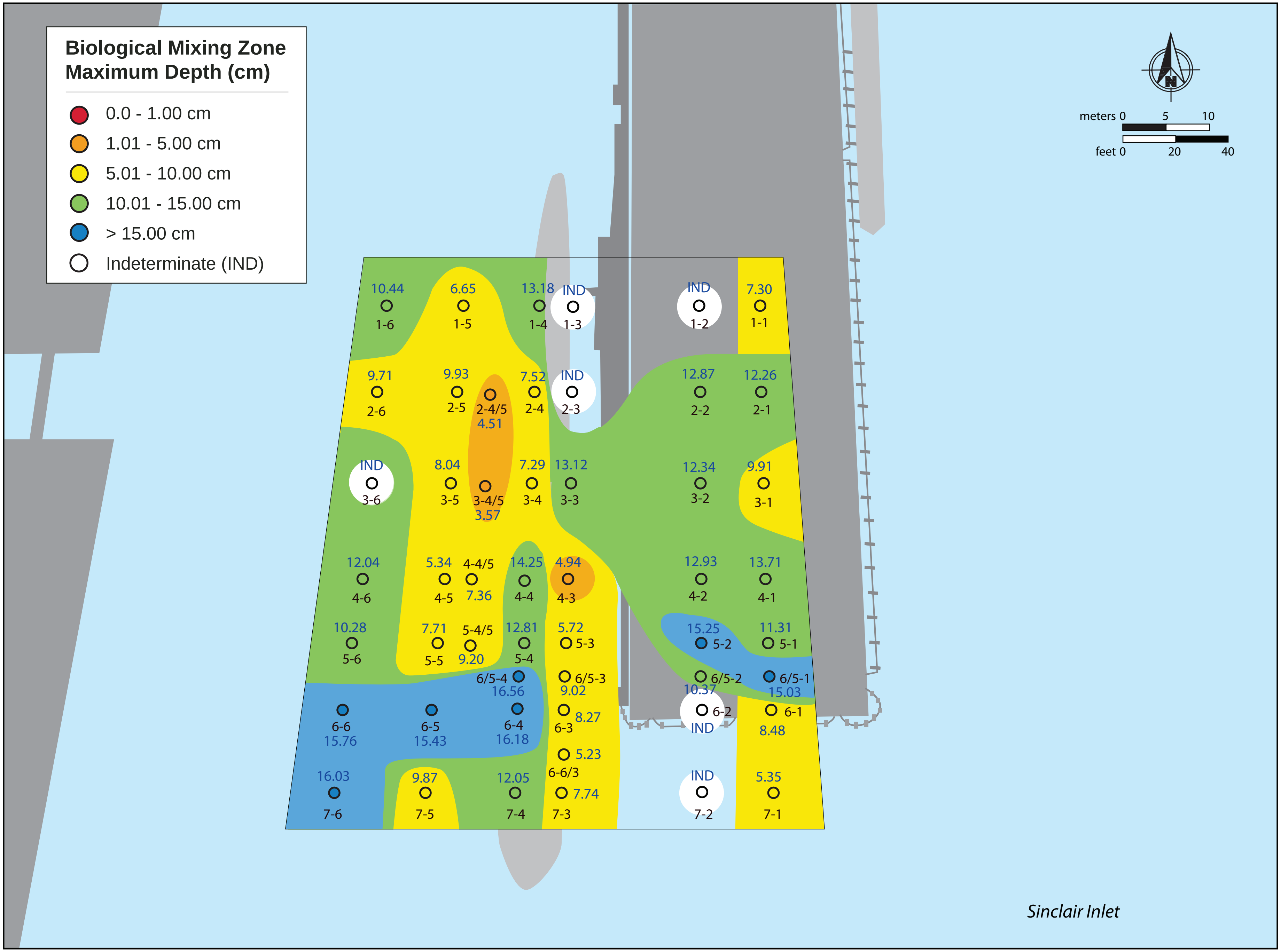


Figure 15: Spatial distribution of maximum biological mixing depth (cm) at Pier 7 at the PSNS & IMF Bremerton site in July 2015.

APPENDIX A

Sediment Profile Image Analysis Results

STATION	Fram	Stop	Weig	REP	DATE	TIME	Calibration Constant	Penetration Area (sq.cm)	Average Penetration (cm)	GAC Layer Area (sq.cm)	Mean GAC Layer depth (cm)	RPD Area (sq.cm)	Mean RPD (cm)	Mixing Zone Max Depth (cm)	Squid eggs at Station ?	Successional Stage
1-4	F	15	4	C	7/27/2015	14:24:23	14.577	192.19	13.18	None		28.21	1.94	13.18	Yes	2 -> 3
1-5	F	15	4	C	7/27/2015	14:47:51	14.577	152.97	10.49	None		13.38	0.92	6.65	no	Stage 2
1-6	F	15	4	B	7/27/2015	14:55:29	14.577	200.59	13.76	None		13.66	0.94	10.44	no	1 -> 2
2-3	F	15	4	A	7/27/2015	14:00:04	14.577	18.27	1.25	18.27	1.25	ind	ind	ind	no	ind
2-4/5	F	15	4	A	7/27/2015	15:17:13	14.577	65.70	4.51	trace	trace	ind	1.26	4.51	no	1 -> 2
2-4	F	15	4	A	7/27/2015	13:52:27	14.577	133.30	9.14	133.30	9.14	11.71	0.80	7.52	no	1 -> 2
2-5	F	15	4	A	7/27/2015	15:12:28	14.577	274.65	18.84	None		21.12	1.45	9.93	no	Stage 1 on 3
2-6	F	15	4	B	7/27/2015	15:06:24	14.577	141.60	9.71	None		13.96	0.96	9.71	no	Stage 2 on 3
3-4/5	F	15	4	B	7/27/2015	15:42:16	14.577	52.03	3.57	None		7.36	0.51	3.57	no	Stage 2
3-4	F	15	4	A	7/27/2015	13:39:01	14.577	149.18	10.23	149.18	10.23	4.09	0.28	7.29	no	Stage 1
3-5	F	15	4	B	7/27/2015	15:38:08	14.577	117.26	8.04	None		3.76	0.26	8.04	yes	Stage 2
3-6	F	15	4	B	7/27/2015	15:32:26	14.577	21.42	1.47	None		>21.42	>1.47	ind	no	ind
4-3	F	15	4	A	7/27/2015	9:12:19	14.577	72.07	4.94	72.07	4.94	0.00	0.00	4.94	yes	Stage 1
4-4/5	F	15	4	C	7/27/2015	13:24:09	14.577	120.31	8.25	trace	trace	0.00	0.00	7.36	Yes	Stage 1
4-4	F	15	4	C	7/27/2015	11:24:48	14.577	213.72	14.66	128.46	8.81	ind	0.10	14.25	Yes	Stage 1
4-5	F	15	4	C	7/27/2015	13:02:07	14.577	100.01	6.86	None		1.50	0.10	5.34	Yes	Stage 1
4-6	F	15	4	D	7/27/2015	12:42:48	14.577	179.77	12.33	None		20.04	1.37	12.04	no	Stage 1 on 3
5-3	F	15	4	C	7/27/2015	9:40:45	14.577	83.38	5.72	83.38	5.72	0.00	0.00	5.72	Yes	Stage 1
5-4/5	F	15	4	C	7/27/2015	13:18:21	14.577	160.52	11.01	None		14.99	1.03	9.20	Yes	Stage 1 on 3
5-4	F	15	4	C	7/27/2015	11:16:26	14.577	209.56	14.38	209.56	14.38	ind	0.10	12.81	Yes	Stage 1
5-5	F	15	4	B	7/27/2015	12:55:36	14.577	183.17	12.57	None		25.24	1.73	7.71	no	Stage 2
5-6	F	15	4	A	7/27/2015	12:11:30	14.577	178.46	12.24	None		12.59	0.86	10.28	no	Stage 2 on 3
6-5/3	F	15	4	C	7/27/2015	10:22:48	14.577	131.49	9.02	131.49	9.02	ind	ind	9.02	Yes	Stage 2
6-5/4	F	15	4	C	7/27/2015	11:11:44	14.577	241.40	16.56	241.40	16.56	ind	0.12	16.56	Yes	Stage 2 on 3
6-6/3	F	15	4	B	7/27/2015	10:21:38	14.577	76.24	5.23	76.24	5.23	ind	ind	5.23	Yes	ind
6-3	F	15	4	B	7/27/2015	10:30:31	14.577	120.50	8.27	120.50	8.27	ind	ind	8.27	Yes	ind
6-4	F	15	4	B	7/27/2015	11:01:02	14.577	235.88	16.18	145.07	9.95	15.43	1.06	16.18	Yes	Stage 1 on 3
6-5	F	15	4	C	7/27/2015	11:50:54	14.577	233.09	15.99	None		6.30	0.43	15.43	Yes	Stage 1 on 3
6-6	F	15	4	C	7/27/2015	11:59:42	14.577	230.87	15.84	None		8.07	0.55	15.76	no	Stage 1 on 3
7-1	F	15	4	B	7/28/2015	9:11:52	14.577	78.05	5.35	None		ind	1.62	5.35	Yes	Stage 2 -> 3
7-2	F	15	4	B	7/28/2015	9:24:46	14.577	57.38	3.94	None		ind	ind	ind	Yes	Stage 2
7-3	F	15	4	C	7/27/2015	10:41:58	14.577	112.85	7.74	None		5.26	0.36	7.74	Yes	Stage 1 on 3
7-4	F	15	4	C	7/27/2015	10:54:30	14.577	175.67	12.05	None		5.49	0.38	12.05	Yes	Stage 1 on 3
7-5	F	15	4	B	7/27/2015	11:43:57	14.577	143.81	9.87	None		25.93	1.78	9.87	Yes	Stage 2 on 3
7-6	F	15	4	A	7/27/2015	12:01:34	14.577	240.58	16.50	None		32.70	2.24	16.03	no	Stage 2 on 3
1-1	H	-	-	A	7/28/2015	11:46:02	14.588	228.17	15.64	None		31.16	2.14	7.30	no	Stage 2

STATION	Fram	Stop	Weig	REP	DATE	TIME	Calibration Constant	Penetration Area (sq.cm)	Average Penetration (cm)	GAC Layer Area (sq.cm)	Mean GAC Layer depth (cm)	RPD Area (sq.cm)	Mean RPD (cm)	Mixing Zone Max Depth (cm)	Squid eggs at Station ?	Successional Stage
1-2	H	-	-	B	7/28/2015	10:58:17	14.588	202.68	13.89	None		ind	ind	ind	Yes	ind
1-3	H	-	-	B1	7/28/2015	12:35:12	14.588	147.55	10.11	None		ind	ind	ind	Yes	ind
2-1	H	-	-	A	7/28/2015	11:43:47	14.588	199.61	13.68	None		33.71	2.31	12.26	Yes	Stage 2
2-2	H	-	-	A	7/28/2015	10:55:00	14.588	259.17	17.77	None		ind	2.84	12.87	Yes	Stage 2 -> 3
3-1	H	-	-	B	7/28/2015	11:41:25	14.588	214.04	14.67	None		ind	ind	9.91	no	Stage 2 -> 3
3-2	H	-	-	B	7/28/2015	10:51:28	14.588	216.89	14.87	None		ind	2.68	12.34	Yes	Stage 1 on 3
3-3	H	-	-	B1	7/28/2015	12:25:10	14.588	191.41	13.12	191.41	13.12	ind	2.16	13.12	Yes	Stage 1 on 3
4-1	H	-	-	A	7/28/2015	11:37:22	14.588	200.03	13.71	None		ind	2.38	13.71	Yes	Stage 1 on 3
4-2	H	-	-	B	7/28/2015	10:47:34	14.588	189.08	12.96	None		ind	2.14	12.93	no	Stage 2 -> 3
5-1	H	-	-	A	7/28/2015	11:33:38	14.588	191.42	13.12	None		ind	2.56	11.31	no	Stage 2 -> 3
5-2	H	-	-	A	7/28/2015	10:20:59	14.588	228.82	15.69	None		ind	0.40	15.25	Yes	Stage 2 -> 3
6-5/1	H	-	-	B	7/28/2015	11:31:27	14.588	216.25	14.82	None		ind	ind	15.03	Yes	ind
6-5/2	H	-	-	A	7/28/2015	10:41:14	14.588	250.81	17.19	250.81	17.19	5.22	0.36	10.37	no	Stage 1 -> 2
6-1	H	-	-	B	7/28/2015	11:26:58	14.588	193.33	13.25	None		ind	ind	8.48	Yes	Stage 2 -> 3
6-2	H	-	-	B	7/28/2015	10:17:59	14.588	172.27	11.81	172.27	11.81	ind	0.10	ind	no	Stage 1

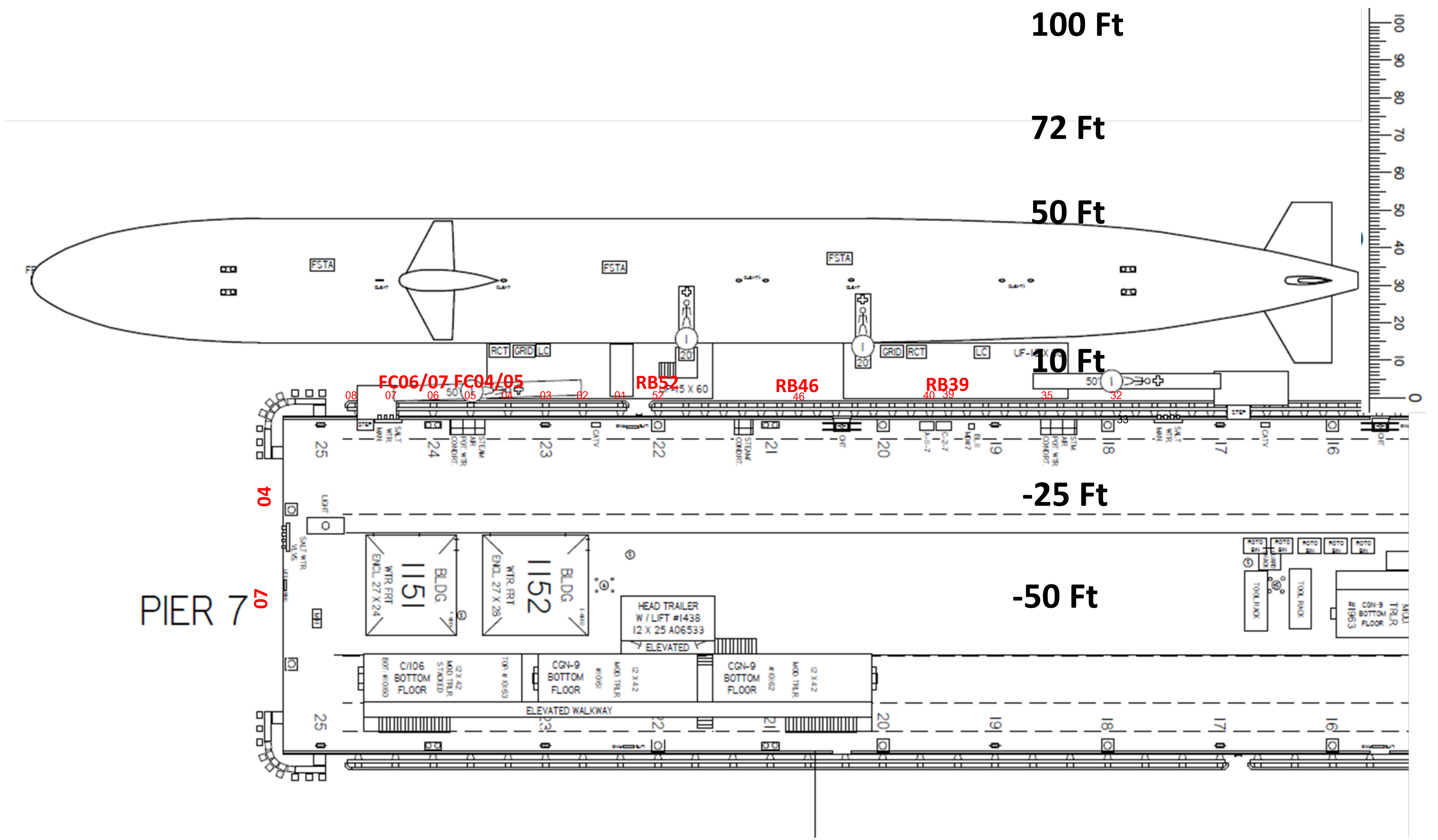
STATION	Fram	COMMENT
1-4	F	Silty sed, small shell frag incorporated into sed; no GAC; fecal pellets in upper 1 cm; burrowing anemone at SWI and to depth, squid eggs (this is the max bio depth); squid eggs in other replicates too; transected burrows at depth
1-5	F	Silty sed, some coarser grains near SWI, small shell frag throughout; fecal pellets (including bivalve) in upper couple cms and evidence of burrowing
1-6	F	Silty sed; no GAC; fecal pellets in upper couple cms
2-3	F	Almost no penetration; shell hash, GAC carrier pebbles, and some grayish-black sediment
2-4/5	F	Silty sed, transected burrow with reduced fecal pellets; darker reduced sed at SWI on left and in patches throughout which appears to be activated carbon; few shells on surface. Evidence of subsurface burrowing
2-4	F	Silty sed, all GAC; fecal pellets in upper cm; squid eggs and shell at SWI. Apparent "burrow"is drag-down artifact from prism
2-5	F	Sandy silt-clay with no GAC; fecal pellets at surface; patch of *Ulva* within upper few cm; patch of reduced sed at SWI, connected to deeper burrow, with small voids at depth
2-6	F	Sandy silt-clay with no GAC; some coarser grains near SWI; shallow burrowing; several polychaetes at depth and small void
3-4/5	F	Silt on silty sand; no GAC; thin silt layer on surface covering sand; shell frag and barnacles on surface, bit of *Ulva* on surface; small shallow burrowing in upper couple cms
3-4	F	Silty sed, coarser grains near surface; shell frags on surface- mussel and others; SWI disrupted in left (disrupted in all replicates); GAC incorporated through depth; some fecal pellets at SWI; foraging crab in rep C
3-5	F	Sandy silt-clay, few small patches of coarser sed in upper couple cms; patchy oxidized layer over gray reduced sed in contact with SWI; sus sed; older fecal pellets, broken down/not well formed; squid eggs in reps A and C
3-6	F	Shallow penetration. Silty sand; no GAC; oxidized sed below pen depth; barnacles and cancer crab at surface
4-3	F	GAC entire depth; shell frag on surface, med pieces, some mussels (more in other reps); burrowing anemone and squid eggs on surface
4-4/5	F	Silty sed, gray reduced sed; anemone, squid eggs (below SWI, max depth), barnacles, bivalve shells on surface; possible trace GAC mixed through depth
4-4	F	Silty sed; GAC throughout depth; shell frag at surface and throughout depth; squid eggs in rep A
4-5	F	Sandy silt; recently disturbed (propwash), few fecal pellets at surface; capitellid ? at 5.3 cm; squid egg in rep A, pebble in rep B
4-6	F	Sandy silt-clay with some coarser grains near SWI; no GAC; small hydroid At SWI; few small polychaetes at depth
5-3	F	Silty sed; layer of GAC carrier pebbles; squid eggs; mussel shell; reduced sediment at depth
5-4/5	F	Sandy silt-clay; no GAC; few fecal pellets at surface; small shallow burrowing; squid eggs on surface and to depth; small worm & transected burrows visible at depth
5-4	F	Silty sed; GAC through entire depth; couple shells and uniform pebbles/pebbles on surface; squid egg on surface and another at depth from camera dragdown
5-5	F	Silty sand, patches of sand at depth and distributed in upper cms; no GAC; some fecal pellets on surface; small burrowing in upper 3-4 cm. Couple shells with barnacles on surface in background
5-6	F	Silty sed; no GAC; some coarser grains at surface; bits of infauna visible to ~5cm, void/burrow at depth
6-5/3	F	Uniform pebbles plus mussel shell frag over GAC layer; snail at top of pebble layer; squid eggs in rep A; transected burrows at depth; impossible to measure aRPD depth because most likely in surface 3-4 cm that is all coarse material
6-5/4	F	Silty sed; GAC entire depth, few shell frag through depth; squid eggs in all 3 reps (this is max bio depth); burrowing anemone in rep B; transected burrows at depth; diffusional aRPD
6-6/3	F	Uniform pebbles over GAC layer; squid egg; cancer crab - successional stage cannot be assessed because prism did not penetrate into fine-grained subsurface material
6-3	F	Uniform pebbles over GAC layer; squid eggs;successional stage cannot be assessed because prism did not penetrate into fine-grained subsurface material
6-4	F	Silty sed; GAC much of depth; patchy aRPD; squid egg on surface; sand tube of large polychaete at surface; fecal pellets - some at depth; reduced sed at surface connected to a closed burrow at ~5cm; transected burrows at depth
6-5	F	Silty sed, few coarser grains near surface; no GAC; fecal pellets at SWI; thin aRPD; small polychaete at depth; voids in other reps, transected burrows at depth
6-6	F	Silty sed; no GAC; some coarse grains near surface; few fecal pellets; patchy aRPD; thin polychaete & transected burrows at depth
7-1	F	Silty sand; shell fragments on surface; barnacle in background; bits of oxidized sed dispersed with sand; squid eggs in rep A amongst mussel shell frag; large anemone in rep C
7-2	F	Sand; no GAC; small bits of oxidized silt; couple fecal pellets; barnacles on surface; shell frag (bivalves); small shrimp on surface at left; squid eggs in rep A; barnacles in all reps; profile disrupted by shell hash drag down, impossible to assess aRPD or mixing depth
7-3	F	Silty sed, some coarser grains near surface; small shell frag on surface; no GAC; fecal pellets; thin aRPD; polychaete & transected burrows at depth, squid egg on surface
7-4	F	Silty sed; no GAC: large bivalve shell (scallop or oyster)on surface at left; patchy aRPD; fecal pellets incorporated in upper couple cm; squid egg and anemone in rep B, transected burrows throughout profile & at depth
7-5	F	Silty sed; no GAC; hydroids on shell at surface; few fecal pellets in upper cm; several polychaetes at depth below aRPD; squid egg in rep C
7-6	F	Silty sed; no GAC; fecal pellets incorporated in upper 2 cm; evidence of small burrowing in upper 4 cm; feeding void at depth
1-1	H	Silty sed; no GAC; surface covered with larger shell fragments with layer of finer sed with shell hash mixed in; small polychaete below aRPD

STATION	Fram	COMMENT
1-2	H	Silty sed, reduced; no GAC; larger shell frag on surface; some coarser grains and v small shell frag tracing a division between looser fine grains and most compact silt/clay from ~2 cm below SWI on right to depth on left; possible remnant tubes at left at ~3 cm; squid egg - profile too disturbed by divers to determine aRPD or infaunal successional stage
1-3	H	Silty sed, mostly reduced; no GAC; layer of mixed shell frag (mussels, others) and pebbles on surface; squid egg on surface and below SWI; profile too disturbed by diver insertion to measure other parameters
2-1	H	Silty sed; no GAC; large shell frag, with barnacles on surface - oysters; thin patchy aRPD; small shell frag incorporated throughout depth; small-med polychaete & transected shallow burrows at depth
2-2	H	Silty sed, reduced; no GAC; mixed shell frag on surface; squid egg on surface; small shell frag in upper 5cm; fine structure disturbed by diver insertion, aRPD is linear measurement
3-1	H	Silty sed, no GAC; few large shell frag on surface, small shell frag incorporated throughout depth; 2 Littorina snails on faceplate in rep A, fine structure disturbed by diver insertion.
3-2	H	Silty sed, no GAC visible: large shell frag on surface- mussels and other; barnacles; small shell frag incorporated throughout depth; squid egg on surface and one below SWI; transected burrows at depth
3-3	H	Silty sed, all GAC to depth with top 5-7 cm covered with shell frag and GAC-carrier pebbles; barnacles; small crab; squid egg; transected burrows at depth
4-1	H	Silty sed, no GAC visible; Littorina snail on faceplate; shell frag throughout depth; squid eggs at surface, transected burrows at depth
4-2	H	Silty sed, no GAC visible; shell fragments- mussels and others, at surface; smaller shell frag throughout depth
5-1	H	Silty sed, no GAC visible; surface covered with med shell frag and incorporated in upper 4 cm; small shell frag throughout depth, transected burrows at depth
5-2	H	Silty sed, mostly reduced; no GAC; mussel shell and barnacles at surface; shell frag incorporated throughout depth; polychaete at 9.4cm; squid egg on surface and below SWI ; transected burrows at depth
6-5/1	H	Silty sed, no GAC visible; structure throughout profile disturbed by camera penetration and shell drag down; few large shell frag on surface; small shell frag through depth; squid eggs also dragged down through profile
6-5/2	H	Silty sed, mostly reduced; all GAC; thin patchy aRPD; shell frag and GAC carrier pebbles in top 3 cm (also in rep B); small shell frag throughout depth; small polychaete (wispy looking) at 3.3cm
6-1	H	Silty sed, no GAC visible; med shell frag on surface, small shell frag incorporated throughout depth; fine structure disturbed by diver insertion artifacts
6-2	H	Silty sed, mostly reduced; all GAC, aRPD is diffusional; Littorina snail on surface; shell frag on surface and incorporated throughout depth

APPENDIX D STANDARD OPERATING PROCEDURES

Station Location Descriptions

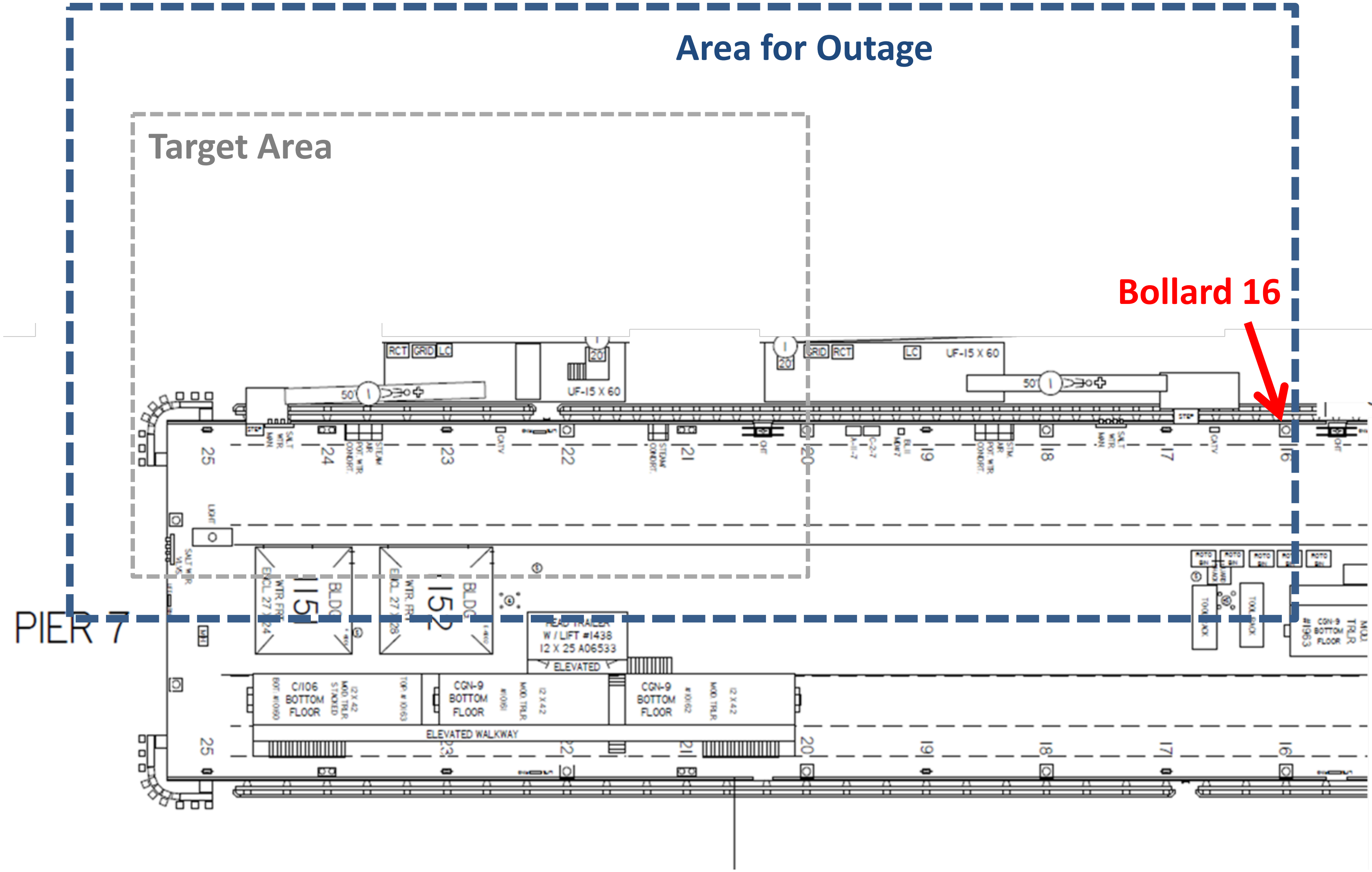
Pier 7 Base Map Aug 2015



RB52 – in line with Bollard 22
RB46 – 9 ft N of South Tip of Cleat 21
RB39 – 12 ft S of Cleat 19

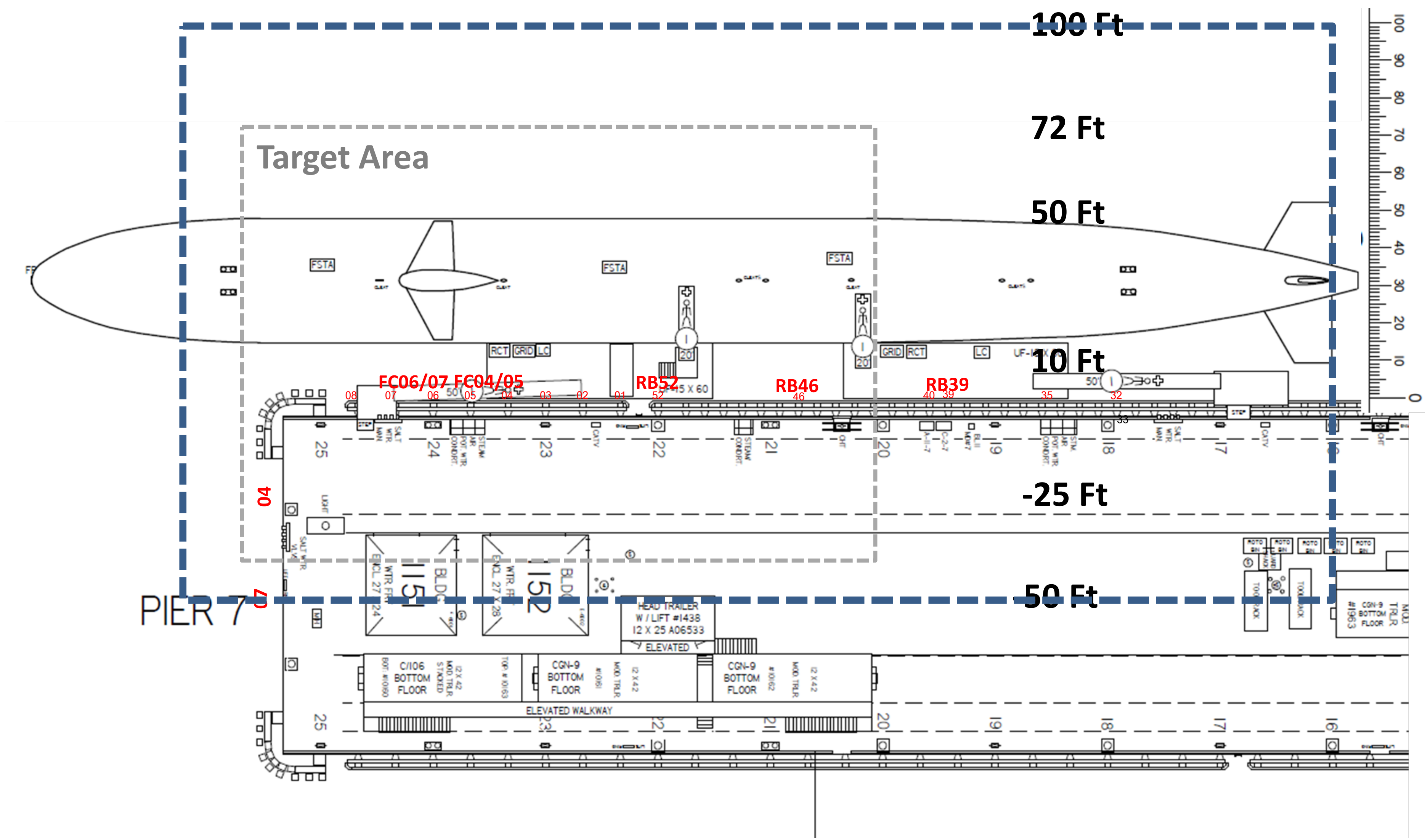
RB40 – 14 ft N of Bollard 20
RB35 – 16 ft S of Bollard 18
RB32 – 2 ft N of Bollard 18

Area Outage



Area for Outage
Target Area
Bollard 16
PIER 7
UF-15 X 60
ELEVATED WALKWAY
C/106 BOTTOM FLOOR
CGN-9 BOTTOM FLOOR
CGN-9 BOTTOM FLOOR

Pier 7 Area of Outage for Sampling July 2015



RB52 – in line with Bollard 22
RB46 – 9 ft N of South Tip of Cleat 21
RB39 – 12 ft S of Cleat 19

RB40 – 14 ft N of Bollard 20
RB35 – 16 ft S of Bollard 18
RB32 – 2 ft N of Bollard 18

SEA Ring (Multi-Metric) Stations 2012-2015

1-MM 25 ft west of the pier in front of piling RB-46. Re-positioned out from initial position due to slope and shell debris

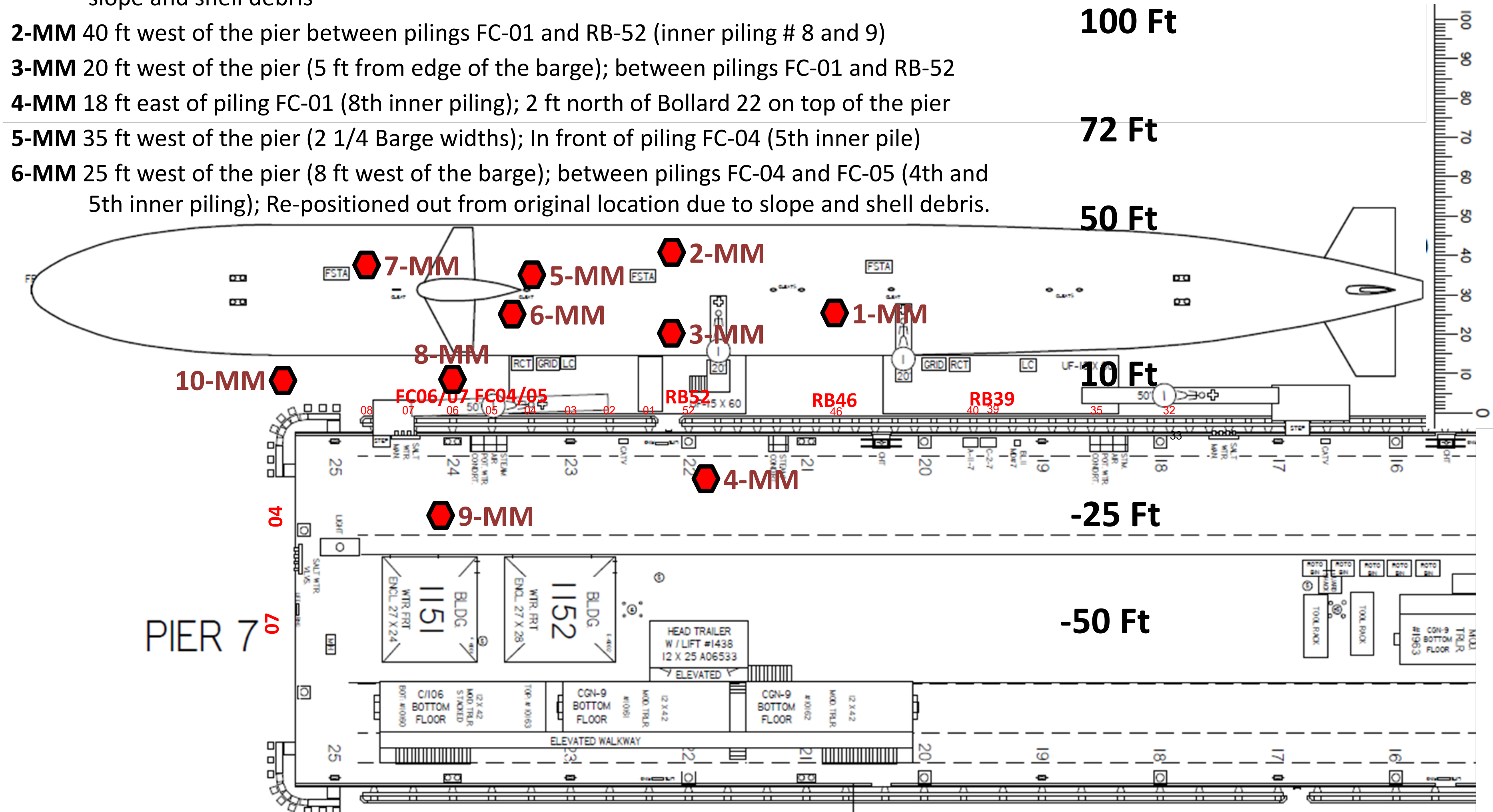
2-MM 40 ft west of the pier between pilings FC-01 and RB-52 (inner piling # 8 and 9)

3-MM 20 ft west of the pier (5 ft from edge of the barge); between pilings FC-01 and RB-52

4-MM 18 ft east of piling FC-01 (8th inner piling); 2 ft north of Bollard 22 on top of the pier

5-MM 35 ft west of the pier (2 1/4 Barge widths); In front of piling FC-04 (5th inner pile)

6-MM 25 ft west of the pier (8 ft west of the barge); between pilings FC-04 and FC-05 (4th and 5th inner piling); Re-positioned out from original location due to slope and shell debris.



7-MM 35-40 ft west of the pier; In front of piling FC-08 (1st inner piling)

8-MM 8 ft west of piling FC-06 (3rd inner piling); under large black bumper; in front of Cleat #B on top of the pier.

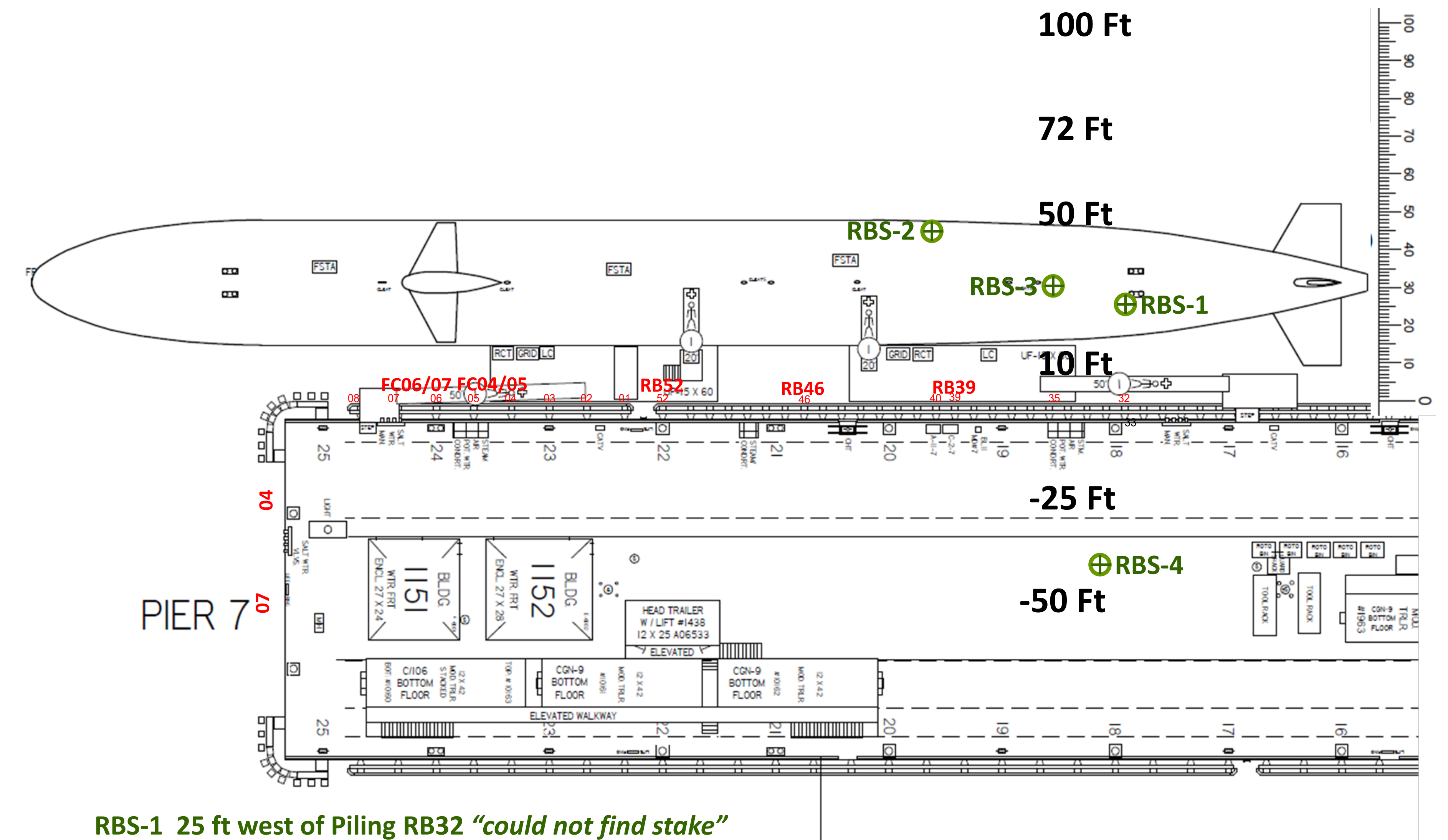
9-MM 25 east of the outer piling, 1st cleat on top of the pier (Cleat 24).

10-MM 8 ft west of the pier; 5th outer piling in (starting around the corner on the south facing side of the pier)

RB52 – in line with Bollard 22
RB46 – 9 ft N of South Tip of Cleat 21
RB39 – 12 ft S of Cleat 19

RB40 – 14 ft N of Bollard 20
RB35 – 16 ft S of Bollard 18
RB32 – 2 ft N of Bollard 18

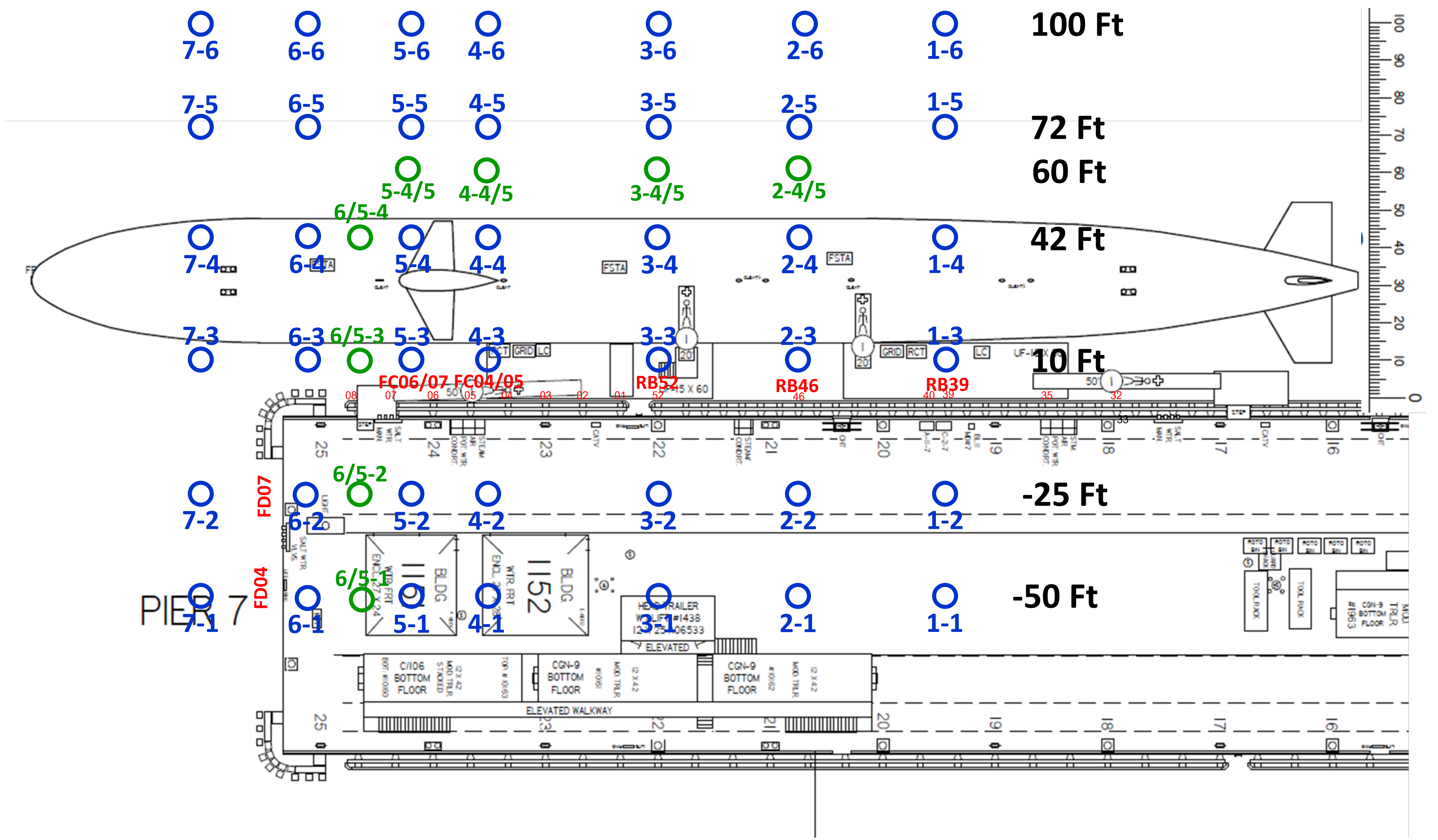
Reference Benthic Stations



RBS-1 25 ft west of Piling RB32 *"could not find stake"*
RBS-2 45 ft west of Piling RB40 *"could only read 'B' on stake"*
RBS-3 30 ft west of Piling RB35 found stake for RBS-3
RBS-4 From Bollard 18 under pier, south side of middle piling 10 ft from piling base *"could not find stake"*

RB52 – in line with Bollard 22
RB46 – 9 ft N of South Tip of Cleat 21
RB39 – 12 ft S of Cleat 19
RB40 – 14 ft N of Bollard 20
RB35 – 16 ft S of Bollard 18
RB32 – 2 ft N of Bollard 18

Proposed SPI Camera Locations July 27-28, 2015



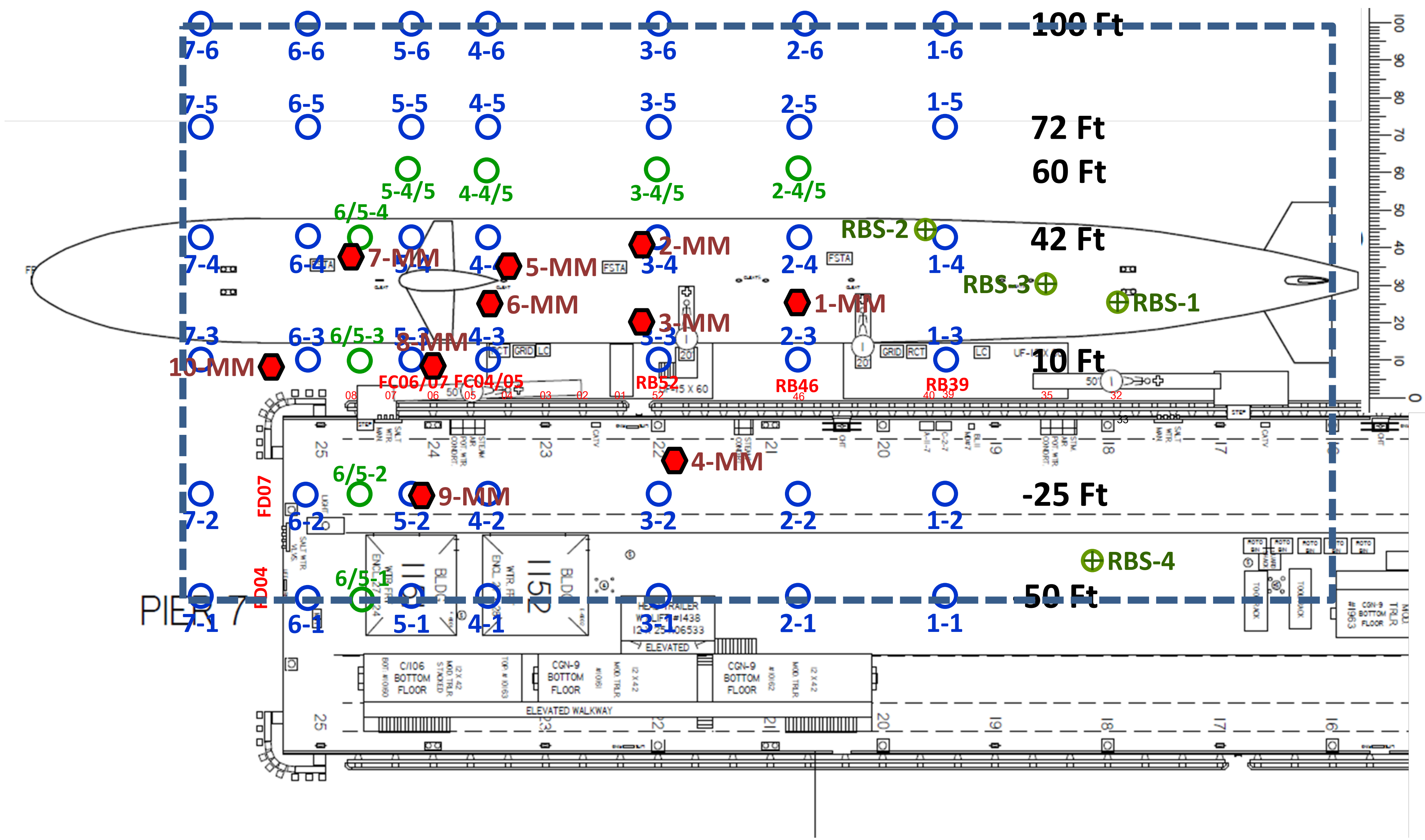
SPI Camera Stations Sampled in 2012

Additional SPI Camera Stations Targeted for Amendment Edge

RB52 – in line with Bollard 22
RB46 – 9 ft N of South Tip of Cleat 21
RB39 – 12 ft S of Cleat 19

RB40 – 14 ft N of Bollard 20
RB35 – 16 ft S of Bollard 18
RB32 – 2 ft N of Bollard 18

All Stations



SPI Camera Stations Sampled in 2012

Additional SPI Camera Stations Targeted for Amendment Edge

RB52 – in line with Bollard 22
RB46 – 9 ft N of South Tip of Cleat 21
RB39 – 12 ft S of Cleat 19

RB40 – 14 ft N of Bollard 20
RB35 – 16 ft S of Bollard 18
RB32 – 2 ft N of Bollard 18

RAMBOLL ENVIRON

February 6, 2016

STANDARD OPERATING PROCEDURE

DIVER COLLECTION OF SURFACE SEDIMENT SAMPLES AND SAMPLE PREPARATION FOR BENTHIC COMMUNITY CENSUS

Scope: This standard operating procedure (SOP) describes the methods to be followed to collect surface sediment samples for benthic community census. Additionally, this SOP describes the post collection sample preparation for analysis by an aquatic bioassessment laboratory.

Purpose: The purpose of this procedure is to establish a uniform method of collecting surface sediment samples and sample preparation to assure quality control in field operations.

Equipment:

- 5 2-foot core liners per sampling station.
    - Each core liner will be marked with yellow or white electrical tape at 1 foot and up arrow. The target core depth is 15-cm. The core liner is marked to 1 foot to ensure adequate recovery is achieved.
    - Each core liner has an inside diameter of 4.8 cm (surface area of 18.1 cm^2). Therefore, five samples at each sampling station will yield a composite sample of 0.9 L per sampling station (0.18 L x 5 samples; composite sample area of 0.01 m^2).
- Two core liner caps per core liner
- 1-L wide-mouth Nalgene sample containers provided by Eco Analyst, Inc.
- Coolers provided by Eco Analyst, Inc.
- Ice
- Labels (waterproof) for sample containers (both adhesive for outside and rite-in-rain paper for inside)
- Field sampling logs
- Pens/markers (waterproof)
- Disposable gloves
- 5-gallon buckets

Diver Sampling Procedures:

1. The benthic community census samples will be obtained adjacent to the placement of the Sediment Ecotoxicity Assessment Rings (SEA Rings).
2. The diver will obtain five core liner samples at each multi-metric and reference station for one composite sample at each station. There are fourteen stations as described in *Demonstration of In Situ Treatment with Reactive Amendments for Contaminated Sediments in Active DoD Harbors* (SPAWAR 2012). One composite sample will be obtained at each of the fourteen sample stations for a total of fourteen composite samples. Ten sampling stations are within the amendment placement target area (SEA Rings will be present at these ten sampling stations (multi-metric stations). Four sampling stations will be adjacent to the amendment placement target area with no SEA Ring present (reference stations).
3. Five core liner sediment samples will be collected sequentially at each station for one composite sample. The core liners should be placed adjacent to the SEA Ring location at stations as shown

in Figure 1. At stations with and without the SEA Ring, the five sequential core liner sediment samples should be placed adjacent to one another (Figures 1 and 2). The core liners need not be placed directly adjacent to the SEA ring if the conditions of the sediment are not as described in the following steps. The diver should seek to obtain a sample nearest to the SEA Ring location with the sediment characteristics as described in the following steps.

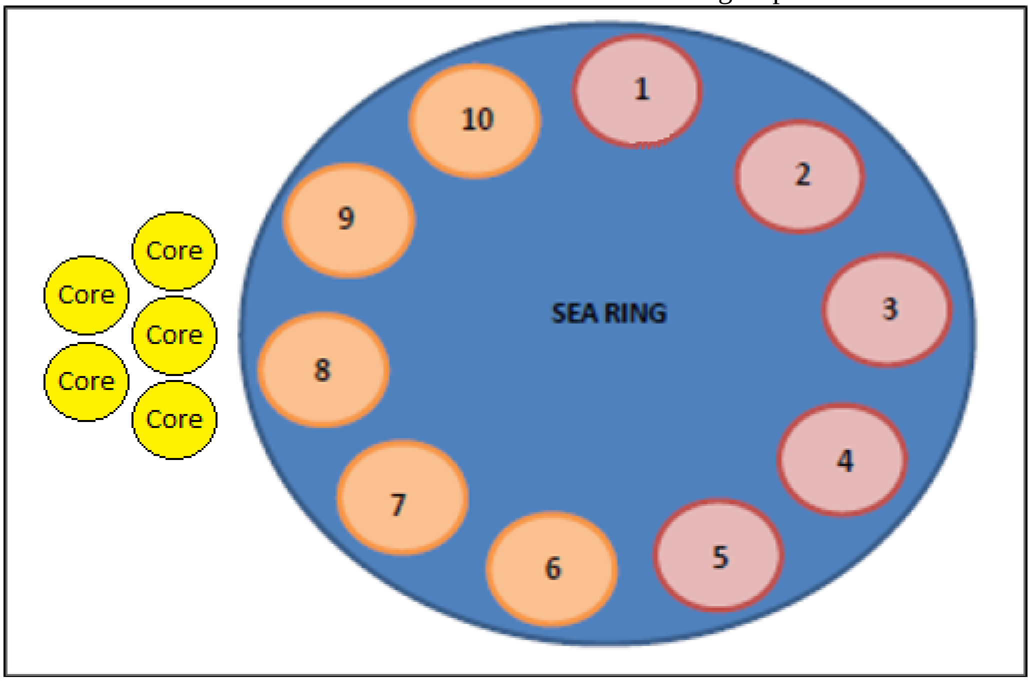


Figure 1 Graphic Representation of Each Sample Station with SEA Ring

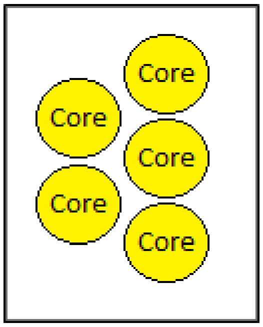


Figure 2 Graphic Representation of Each Sample Station without SEA Ring

4. The core liners should be placed on the sediment surface in an area of soft sediment clear of visible debris. If any large rocks or debris are encountered, discard debris to the side. Do not retain large debris in core liner.
5. The diver will press each of the five core liners into the sediment at each sampling station to a depth of 1 foot as marked on the liner.
6. Once the core liner reaches the depth of 1 foot, the cap will be placed on the top of the core liner. The diver will carefully pull up the core liner and immediately place the second cap on the bottom of the core liner. The diver will repeat this for each of the five core liners at each sample station (to be composited into one composite sample per station at the surface).
7. Once five core liners have been obtained at each sampling station, the diver will carry the core liners to the boat in a dive bag for further sample preparation.

Sample Preparation Procedures (at surface):

1. Label sample containers on outside and inside.

2. The sample will be obtained and brought to the surface by the diver as described above.
3. The core liners will be placed in a 5-gallon bucket for stability. The top cap will be carefully removed to prevent disruption of the overlying water. If the surface sediment is stirred when the top cap is removed, the sediments will be allowed to settle under the overlying water is clear. The overlying water is carefully decanted, retaining approximately 1-inch of overlying water on top of the sediment.
4. The core liner may have greater recovery than the target 15-cm. If this is the case, the sediments of the bottom of the core will be discarded to obtain a sample of the target 15-cm recovery.
5. The labelled 1-L Nalgene sample container is placed directly under the core liner and the bottom cap of the core liner is carefully removed. The sediment sample is placed directly into the 1-L Nalgene. This is repeated until the 5 core liners are emptied into the 1-L Nalgene sample containers (multiple containers per sample are likely needed). The sample jar should be 90% full with the headspace filled with air.
6. Tightly cap the sample jar
7. Sample jars will be immediately placed on ice in coolers.
8. Complete Chain of Custody
9. The coolers will be shipped overnight to EcoAnalysts and fixated with formalin within 24 hours of sample collection.
10. A sampling log will be maintained with the following information:
    a. Sample ID
    b. Sample location with coordinates
    c. Date and sample time
    d. Sample depth of core placed into sample container
    e. Sediment type (i.e. silt, clay, mud, sand)
    f. Presence or absence of hydrogen sulfide smell (i.e. none, slight, strong)

References

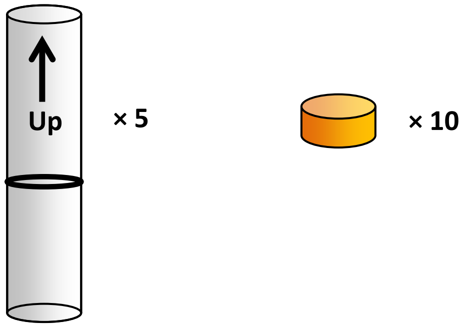
ASTM. 2008. Standard Guide for Collection, Storage, Characterization, and Manipluation of Sediments for Toxicological Testing and for Selection of Samplers Used to Collect Benthic Invertebrates. E 1391-03.

PSEP. 1987. Recommended Protocols for Sampling and Analyzing Subtidal Benthic Macroinvertebrate Assemblages in Puget Sound. For US EPA and Puget Sound Water Quality Authority. January.

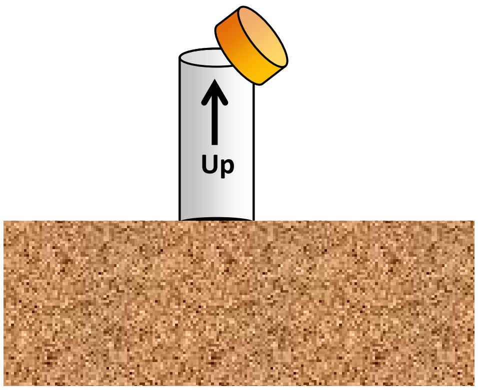
Washington State Department of Ecology. 2008. Standard Operating Procedures for Macrobenthic Sample Analysis. Environmental Assessment Program. Approved March 10.

Diver Guide for Sediment Sample Collection at Each Station

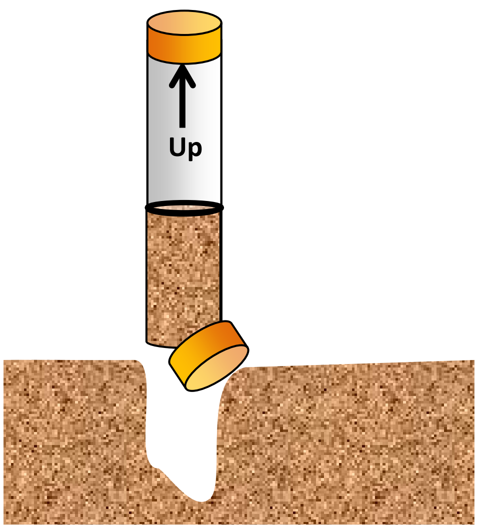
1. Take 5 1-ft-long plastic core tubes and 10 core caps to bottom sediment sample station



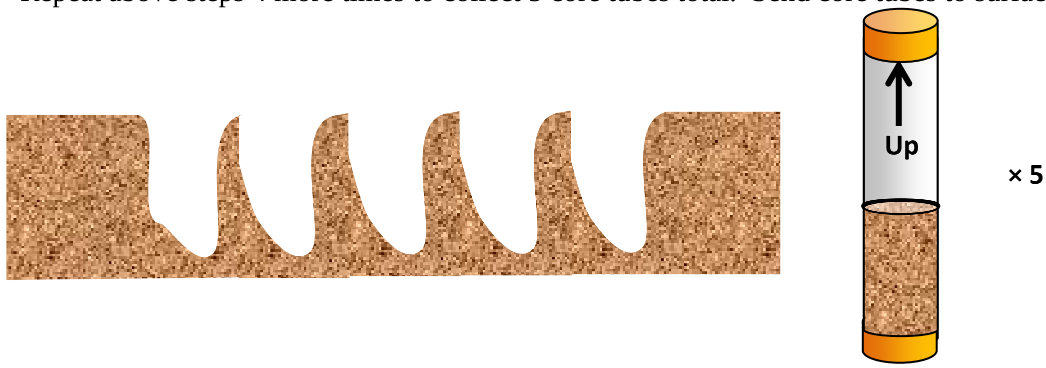
2. Insert core tube in sediment until sediment within the core tube reaches the marked line (10-cm depth), then cap the top of the core tube.



3. Pull the core tube from the sediment, retaining a sediment sample. Cap bottom end of core tube to prevent sample loss as core is pulled out.



4. Repeat above steps 4 more times to collect 5 core tubes total. Send core tubes to surface.



STANDARD OPERATING PROCEDURES

for

Laboratory Analysis: Marine Benthic Macroinvertebrate Indicator

Prepared by

ECOANALYSTS, INC.

LIFE IN WATER

1420 South Blaine Street, Suite 14
Moscow, Idaho 83843

February 2015

A1. TITLE AND APPROVAL SHEET

Document Title:
Quality Assurance Project Plan for Laboratory Analysis: Marine Benthic Macroinvertebrate Indicator

Preparer:
EcoAnalysts, Inc., Moscow, Idaho

Address and Telephone Number:
1420 South Blaine Street, Suite 14, Moscow, Idaho 8343/ (208) 882-2588

Day/Month/Year
18/February/2015

EcoAnalysts, Inc. President/CEO, Project Manager: Gary T. Lester
Gary T. Lester. / 18 February 2015

A2. TABLE OF CONTENTS

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Table 1. Acronyms and Abbreviations

BMI	Benthic Macroinvertebrate
CEO	Chief Executive Officer
EPA	United States Environmental Protection Agency
DQO	Data Quality Objective
EcoAnalysts	EcoAnalysts, Inc.
LIMS	Laboratory Information Management System
MQO	Measurement Quality Objective
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
SOP	Standard Operating Procedure
US EPA	United States Environmental Protection Agency

DOCUMENT CONTROL

This document has been prepared according to the United States Environmental Protection Agency publication, *EPA Requirements for Quality Assurance Project Plans* (EPA QA/R5, March 2001). This QAPP will be reviewed annually and updated as needed. Updated versions of this QAPP will bear a new (x + 1) revision number.

GROUP A: PROJECT MANAGEMENT

A3. DISTRIBUTION LIST

Each person listed on the Approval Signature Page and each person listed in Table 2 or his/her successor will receive a copy of the final approved version of this Quality Assurance Project Plan. A copy will also be made available to other persons taking part in the project and to other interested parties.

Table 2. QAPP for Laboratory Analysis: BMI Distribution List

Name	Title/Affiliation	Address	Phone/email
Gary T. Lester	CEO, Project Manager EcoAnalysts, Inc.	1420 South Blaine Street, Suite 14 Moscow, ID 83843	208-882-2588 ext 21 glester@ecoanalysts.com
Pat Barrett	Taxonomy Coordinator EcoAnalysts, Inc.	1420 South Blaine Street, Suite 14 Moscow, ID 83843	208-882-2588 ext 27 pbarrett@ecoanalysts.com
Megan Payne	Sorting Lab Manager EcoAnalysts, Inc.	1420 South Blaine Street, Suite 14 Moscow, ID 83843	208-882-2588 ext 59 mpayne@ecoanalysts.com
Kaylani Merrill	Technical Business Development EcoAnalysts, Inc	1420 South Blaine Street, Suite 14 Moscow, ID 83843	208-882-2588 ext 81 kmerrill@ecoanalysts.com

A4. PROJECT/TASK ORGANIZATION

The primary responsibilities of the principals are as follows:

<u>EcoAnalysts Project Manager – Gary Lester, CEO</u>

- Provides overall coordination of the project and makes decisions regarding the proper functioning of all aspects of the project; and

- Makes assignments and delegates authority as needed, to other parts of the project organization.

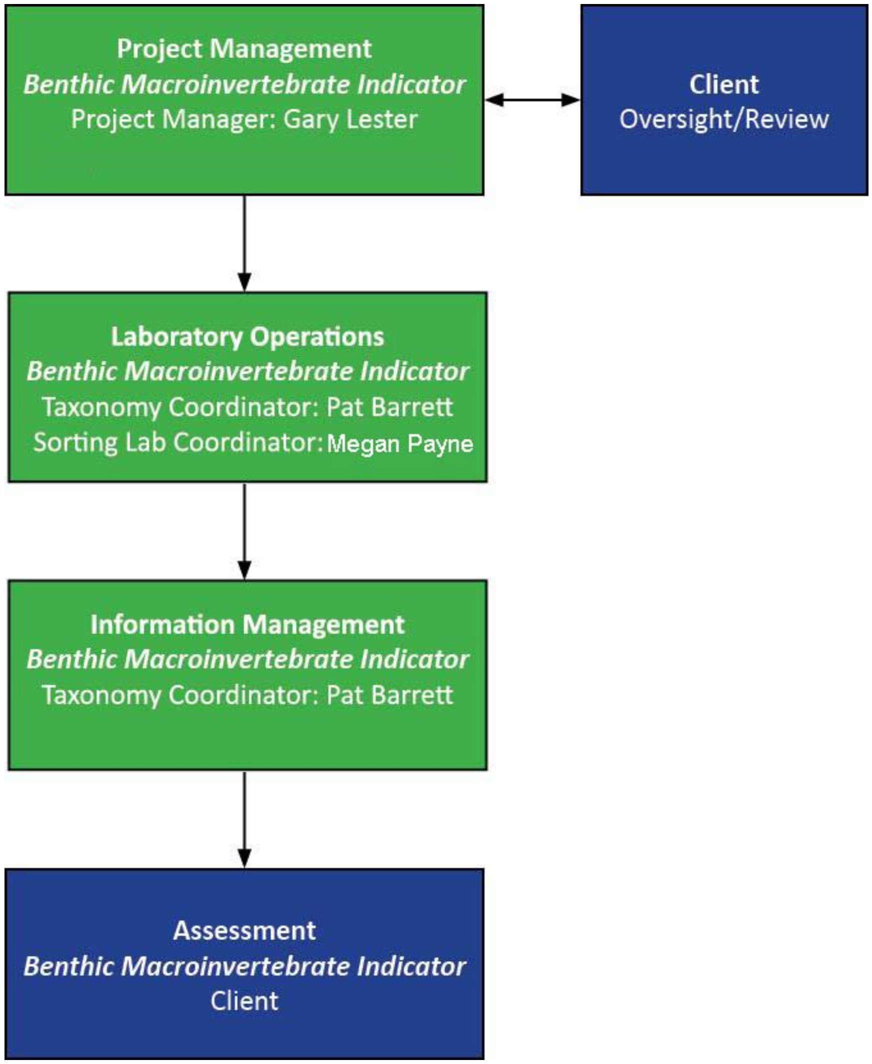
<u>EcoAnalysts Laboratory Managers – Patrick Barrett and Megan Payne</u>

- Oversee analysis of benthic macroinvertebrate samples; and
- Ensure the validity of data for the benthic macroinvertebrate indicator.

Table 3. Principal Contact List

Gary Lester CEO, Project Manager EcoAnalysts, Inc. 1420 South Blaine Street Suite 14 Moscow, ID 83843 Phone: 208-882-2588 ext. 21 Fax: 208-883-4288 glester@ecoanalysts.com	
Patrick Barrett Taxonomy Coordinator EcoAnalysts, Inc. 1420 South Blaine Street Suite 14 Moscow, ID 83843 Phone: 208-882-2588 ext. 27 Fax: 208-883-4288 pbarrett@ecoanalysts.com	Megan Payne Sorting Lab Manager EcoAnalysts, Inc. 1420 South Blaine Street Suite 14 Moscow, ID 83843 Phone: 208-882-2588 ext. 59 Fax: 208-883-4288 mpayne@ecoanalysts.com

Figure 1. Project Organization



A5. PROBLEM DEFINITION/BACKGROUND

This QAPP addresses the laboratory operations and analyses for benthic macroinvertebrate indicator samples. This plan describes elements of project management, data quality objectives, measurement and data acquisition, and information management for processing benthic macroinvertebrate samples.

A6. PROJECT/TASK DESCRIPTION

EcoAnalysts is well equipped and staffed to conduct highly specialized analyses related to the benthic macroinvertebrate indicator. EcoAnalysts complies with all methods, procedures, and QA/QC requirements as described in required laboratory methods manuals. Because EcoAnalysts has only one taxonomic expert per major group (i.e., David Drumm: Crustacea; Brendan "Chip" Barrett: Polychaeta), taxonomic identifications are externally QC'd. Prior to initiation of task orders, EcoAnalysts' laboratory operations may be evaluated by EcoAnalysts' Taxonomy Coordinator.

Benthic macroinvertebrate samples will be sorted and identified at EcoAnalysts' laboratory to the lowest practicable level or level required. The sample will first be sorted into major taxonomic groups, which then will be identified to the required taxonomic level and counted. The sorting laboratory manager and taxonomy coordinator will oversee, and periodically review, the work performed by sorting technicians.

A7. QUALITY OBJECTIVES AND CRITERIA

Performance objectives as associated primarily with measurement error, are established (following USEPA Guidance for Quality Assurance Plans EPA240/R-02/009) for analyzing benthic macroinvertebrate indicator samples. The following sections describe approaches for evaluating benthic macroinvertebrate indicator sample analyses.

A7.1 Sorting Efficacy – Aliquot Method

To ensure every sample meets a standard minimum level of sorting efficacy, EcoAnalysts, Inc. re-sorts at least 20% of the sorted material of every sample that is processed in the lab.

The resort is performed by a specially trained and designated sorting quality control technician (this will never be the technician who originally sorted the sample).

The QC technician re-sorts at least 20% of the sorted fraction of the sample to check if at least 90% (or percent established by the client) of the organisms have been removed. An estimated percent efficacy is calculated by dividing the number of organisms found in the original sort by the total number of organisms estimated to be in the sorted material, based on those found in the 20% quality control re-sort, using the following equation:

Equation 1. Sorting Efficacy

$$SortingEfficacy = \frac{OriginalCount}{OriginalCount + \left(\frac{QCCount * QCSquares}{QTSquares}\right)} * 100$$

Where:
OriginalCount = the number of organisms picked by the first sorter
QCCount = the number of organisms found in the Quality Control sort

QCSquares = the number of grids sorted during the QC process
QTSquares = the total number of grids in the QC Caton

Sorting efficacy is measured as the estimated percent of the total organisms found during the original sorting process. If the estimated percent sorting efficacy is 90% or greater, the sample passes the quality control check. If the estimate is less than 90%, the sample is re-sorted. When this happens, the sample undergoes the quality control process again until it passes the 90% efficacy requirement. In addition to calculating sorting efficacy, a specially trained and designated sorting quality control technician, who is never the technician who originally sorted the sample, also verifies label accuracy, information capture on the benchsheet, and the presence/absence of non-target organisms in the taxa vials.

A7.2 Taxonomic Precision and Accuracy

Taxonomic precision is quantified by comparing whole-sample identifications completed by independent taxonomists or laboratories. Accuracy of taxonomy is qualitatively evaluated through specification of target hierarchical levels (e.g., family, genus, or species) and the specification of appropriate technical taxonomic literature or other references (e.g., identification keys, voucher specimens). To calculate taxonomic precision for benthic macroinvertebrate samples, 10 percent of the samples are randomly selected for re-identification by an independent taxonomist or laboratory. Comparison of the results of whole sample re-identifications provides a Percent Taxonomic Disagreement (PTD) calculated as:

Equation 2. Percent Taxonomic Disagreement (PTD)

$$PTD = \left[1 - \left(\frac{comp_{pos}}{N}\right)\right] \times 100$$

where
$comp_{pos}$ = the number of agreements
N = the total number of individuals in the larger of the two counts.

The lower the PTD, the more similar taxonomic results are and the overall taxonomic precision is better. A Measurement Quality Objective (MQO) of ≤15% is recommended for taxonomic differences. Individual samples exceeding 15% are examined for taxonomic areas of substantial disagreement, the reasons for disagreement investigated, and corrective measures taken where needed.

Where re-identification by an independent, outside taxonomist or laboratory is not practical, percent similarity will be calculated between each identifying taxonomist. Percent similarity is a measure of similarity between two communities or two samples (Washington 1984). Values range from 0% for samples with no species in common, to 100% for samples that are identical. It is calculated as follows:

Equation 3. Percent Similarity

$$PSC = 1 - 0.5\sum_{i=1}^{K}\left|a-b\right|$$

where:
a and b = for a given species, the relative proportions of the total samples A and B, respectively, which that species represents.

A MQO of ≥85% is recommended for percent similarity of taxonomic identification. If the MQO is not met, the reasons for the discrepancies between analysts should be discussed. If a major discrepancy is found in how the two analysts have been identifying organisms, the last batch of samples counted by the analyst under review may have to be re-identified.

Additionally, percent similarity should be calculated for re-processed subsamples. This provides a quantifiable measure of the precision of subsampling procedures. A MQO of ≥70% is recommended for percent similarity of subsamples. If a sample does not meet this threshold, additional subsamples should be processed from that sample until the MQO is achieved.

Sample enumeration is another component of taxonomic precision. Final specimen counts for samples are dependent on the taxonomist, not the rough counts obtained during the sorting activity. Comparison of counts is quantified by calculation of percent difference in enumeration (PDE), calculated as:

Equation 4. Percent Difference in Enumeration

$$PDE = \left(\frac{\left|Lab1 - Lab2\right|}{Lab1 + Lab2}\right) \times 100$$

An MQO of ≤5% is recommended. Individual samples exceeding 5% are examined to determine reasons for the exceedance.

A7.3 MQO Evaluation

For samples exceeding these MQOs, corrective actions can include defining the taxa for which re-identification may be necessary (potentially even by a third party), for which samples (even outside of the 10% lot of QC samples) it is necessary, and where there may be issues of nomenclatural or enumeration problems.

Taxonomic accuracy is evaluated by having individual specimens representative of selected taxa identified by recognized experts. Samples will be identified using the most appropriate technical literature that is accepted by the taxonomic discipline and reflects the accepted nomenclature. Where necessary, the World Register of Marine Species (WoRMS,

http://marinespecies.org/) will be used to verify nomenclatural validity and spelling. A reference collection will be compiled as the samples are identified.

A8. SPECIAL TRAINING/CERTIFICATION

Training of EcoAnalysts' project staff, when needed, is done internally through assistance from project operations staff. When appropriate, identifications are verified by taxonomists certified in the applicable area.

Table 4. Certifications By Taxonomist

Name	Degree	Discipline	Years of Relevant Experience	Professional Registrations and Certifications
Brendan "Chip" Barrett	PhD MS	Invertebrate Zoology Marine Polychaetes	22	Southern California Association of Marine Invertebrate Taxonomists (SCAMIT),International Polychaetological Association
David Drumm	PhD MS	Invertebrate Zoology Marine Crustaceans	18	Southern California Association of Marine Invertebrate Taxonomists (SCAMIT), Crustacean Society, Society of Systematic Biologists
Matt Hill	BS	Invertebrate Zoology General Invertebrates	8	Southern California Association of Marine Invertebrate Taxonomists (SCAMIT)
		Total Years Taxonomy Experience:	48	

A9. DOCUMENTATION AND RECORDS

All versions of the QAPP are retained by EcoAnalysts, Inc. EcoAnalysts retains sorting bench sheets indefinitely. Taxonomic data are entered into EcoAnalysts' custom Laboratory Information Management System (LIMS) by taxonomists during the identification process. Sample data are retained by EcoAnalysts indefinitely following completion of the project.

GROUP B: DATA GENERATION AND ACQUISITION

B1. SAMPLING DESIGN

The protocols for establishing sample and study design associated with different indicators are described in the benthic macroinvertebrate indicator-specific sections of the field QAPP or client field manual.

B2. SAMPLING METHODS

The protocols for the collection of samples associated with different indicators are described in the benthic macroinvertebrate indicator-specific sections of the field QAPP or client field manual.

B3. SAMPLE HANDLING AND CUSTODY

Immediately upon receipt of benthic macroinvertebrate samples, all containers are inspected for damage or leakage. Sample labels are checked against chain of custody forms and/or packing slips and any discrepancies are noted. Receipt records are reported to the client within one business day of sample receipt. Chain of custody logs are reported, throughout the project, according to timelines and methods requested by the client.

Samples are logged into the EcoAnalysts, Inc. custom LIMS database and assigned a unique sample tracking number.

B4. ANALYTICAL METHODS

B4.1 Sorting Benthic Macroinvertebrate Samples

A sample is checked out by a trained sorting technician via the LIMS. A sorting bench sheet is printed that contains all of the sample information and sorting protocols assigned to it. The sorter records the primary matrix type and estimates the volume of detritus in the entire sample prior to rinsing. The standard descriptors for the types of sample matrix are: Inorganic, Coarse Organic, Fine Organic, Vegetation, and Filamentous Algae.

The sample is sorted entirely (no subsampling) by emptying the matrix into a sieve of a specified mesh size to remove preservative and fine sediment. If the sample matrix is made up of a significant percentage of inorganic material, the organic material will be elutriated from the inorganic material prior to sorting.

For elutriation, the whole sample is washed into a shallow pan of water where any large pieces of organic material are rinsed and inspected thoroughly by another technician for attached invertebrates. The sample is agitated with water to separate any organic matter from inorganic sediments. After agitating the sample in water, the lighter organic material is poured back into the sieve. The inorganic portion of the sample remaining in the pan is repeatedly washed and decanted into the sieve until no more organic matter remains in the pan with the inorganic material.

The remaining inorganic sediments are inspected under a magnifying lamp (3X) to look for any invertebrates too heavy to have been elutriated (e.g. mollusks, snails, crabs, etc.). If there are significant numbers of heavy invertebrates in the inorganic material – too many to easily remove under the magnifying lamp – the inorganic and organic matrix is recombined into the

sieve and entire sample matrix will be prepared for subsample. If there are not significant numbers of heavy invertebrates in the inorganic material, they are removed under the magnifying lamp and placed with the organic matrix. A second technician inspects the inorganic material for organisms until it is determined there are no more invertebrates in the inorganic fraction of the sample. Unless otherwise requested, the inorganic elutriate is discarded.

The organic material and other contents of the sieve are then evenly distributed into the bottom of a Caton-style tray. These are trays of various sizes consisting of uniform grids, each grid being 2 inches per side and the bottom is constructed of 250-micron mesh. A grid (or a standardized portion of a grid) is randomly selected and its contents transferred to a Petri dish. The material in the Petri dish is sorted under a dissecting microscope (minimum magnification = 10X). The benthic macroinvertebrates are counted as they are placed into vials containing 70% ethanol.

Sorters are trained to pick and count only benthic macroinvertebrates, with heads, that were alive during sampling and contain the attributes required for taxonomic identification. Organisms picked are placed in one of five vials corresponding either to Crustacea, Polychaeta, Mollusca, Generals (miscellaneous taxa), and Special Organisms (SPORGS: Copepods and Ostracods). Specimens rejected according to EcoAnalysts' standard include: Nematodes, Zooplankton, Exuviae, and any organism without a head. When the target count of organisms has been reached or the target percentage of the sample has been sorted but not fully sorted, a special large and rare protocol may be followed on any remaining unsorted material. Organisms deemed relatively large or rare to the sample (in comparison with the target taxa enumerated in the final count) are found by a naked eye scan in the unsorted sample remnants and are not counted but picked and placed in a separate vial.

Laser-printed labels containing the appropriate sample tracking information are placed in the vial(s). The total number of organisms removed (not including large and rare organisms), the number of grids sorted out of the total, the time spent sorting, and the final volume of the remaining sample volume are all recorded on the sorting bench sheet, as well as comments significant to the preparation, sorting, and/or condition of the sample.

To ensure every sample meets a standard minimum level of sorting efficacy, EcoAnalysts, Inc. standard sorting quality assurance is maintained by re-sorting a portion of the sorted material of every sample that is processed in the lab, and ensuring a minimum efficacy is reached (as required by the project). See Section A7.1 for sorting quality objectives.

B4.1 Taxonomic Identification of Benthic Macroinvertebrates

A taxonomist selects a sample for identification via the LIMS and empties it into a Petri dish. Under a dissecting and/or compound microscope, the invertebrates are identified to the level specified by the study design. Copepods and Ostracods are usually enumerated separately from the total count. Taxonomic references used for the taxonomic analysis of samples may be provided upon request. The taxonomist enters each taxon directly into the project database

using a unique taxonomic code (this is done while at the microscope). The number of individuals of each taxon is counted and entered into the database.

As the sample is being identified, the taxonomist enters data directly into the computer using a custom built LIMS database and user interface. The data entry program has several features built into it, including steps for entering taxon names, life stage information, taxonomic notes, etc. There is a visual cue at each step which prompts for a user confirmation. A running tally of invertebrates as well as the number and type of taxa in the sample are displayed on the screen. Therefore, a taxonomist can quickly look for low or high counts as a flag for major discrepancies. Note: With this process, we have successfully eliminated the need for handwritten bench sheets, thereby doing away with a secondary step of data entry and the errors associated with it.

A synoptic reference collection can be prepared, if requested, where at least one specimen (preferably 3-5 specimens) of each taxon encountered is placed into a 1-dram vial containing 70% ethanol and is properly labeled with identity and sample number.

Depending on the requirements of the project, one or several reference collections can be made. Also, organisms can be vouchered by a specified taxonomic level, i.e. vouchered by each taxon per sample. If any synoptic reference collection is made, a second taxonomist examines the reference collection specimens to verify the accuracy of all taxa identified in the project.

If requested, a specified number of the samples are randomly selected for re-identification by a QC taxonomist. All specimens in those samples that were not set aside for the reference collection are re-identified. See Section A7.2 for taxonomic precision and accuracy measurement quality objectives. The final data is adjusted according to the recommendations of both taxonomists. If requested, reconciliation reports are written and delivered to the client as part of the overall Quality Assurance Report.

B5. QUALITY CONTROL

Each benthic macroinvertebrate sample is checked for quality control. See Sections A7.1 and A7.2 of this QAPP for quality objectives.

B6. INSTRUMENT/EQUIPMENT TESTING, INSPECTION, AND MAINTENANCE

All microscopes and laboratory equipment are inspected regularly according to manufacturer recommendations.

B7. INSTRUMENT/EQUIPMENT CALIBRATION AND FREQUENCY

All microscopes and laboratory equipment, including digital imaging equipment, are calibrated regularly according to manufacturer recommendations. Calibration will be checked throughout the project and equipment will be recalibrated if necessary.

B8. INSPECTION/ACCEPTANCE OF SUPPLIES AND CONSUMABLES

Supplies and consumables include alcohol and sample jars. Supplies and consumables are purchased only from reputable and reliable suppliers and are inspected for usability upon receipt.

B9. NON-DIRECT MEASUREMENTS

EcoAnalysts maintains a library of current taxonomic references. These are used for taxonomic identification purposes when such need arises. Taxonomists are responsible for using current references and publications.

B10. DATA MANAGEMENT

As described in section B4.1, data is directly entered into the custom built LIMS database and user interface. With several features built into it, including steps for taxonomic identification of a specimen, the number of specimens in each taxon, life stage information, taxonomic notes, etc., the data entry program successfully eliminates the need for handwritten bench sheets, the secondary step of data entry, and the errors associated with it. Additionally, a running tally of invertebrates and taxonomic groups are displayed on the screen, therefore allowing the taxonomist to quickly identify low or high counts as a flag for potential discrepancies.

Throughout the project and sample analysis, data entry is double checked for accuracy, and validated by the laboratory coordinator. Using our networked computer systems, the appropriate data are combined for each sample to obtain the sorting statistics and comprehensive taxa lists and counts.

Various metrics calculations are offered as output from the LIMS, with EcoAnalysts standard deliverables including (but not limited to) abundance, richness, and community measures. Additional metrics calculations, including more detailed Benthic Invertebrate Indices, may be provided upon request. Other supplemental reports, such as QA/QC results and data analysis and/or interpretation, can be provided dependant on project requirements.

Data are delivered in an electronic format specified by the client and emailed to the technical contact(s). Hard copies and/or copies on compact disc can be mailed to the client upon request. The delivery schedule is agreed upon by the client and EcoAnalysts, Inc. in advance, specifying the sample lots, dates, and components. EcoAnalysts, Inc. retains all raw data files used and derived in our projects.

Quality assurance data sheet checks are part of the sample validation process, and include scanning for apparent entry errors, measurement errors, omissions, and anomalies. Suspect data are flagged and/or excluded from use. Data may be presented in table, graph, and chart format. Unusual data are rechecked to verify their accuracy.

GROUP C: ASSESSMENT AND OVERSIGHT

C1. ASSESSMENT AND RESPONSE ACTIONS

The project manager, Gary Lester, is responsible for all reporting, tracking, and overall project management including field activities, reviewing the data, reporting, and forwarding all data to the client for inspection. Megan Payne and Pat Barrett are responsible for laboratory operations involving processing benthic macroinvertebrate indicator samples for projects.

C2. REPORTS TO MANAGEMENT

Draft reports of project findings will be prepared for the client on a regular basis, as requested. Problems that arise during the project are corrected and reported to client and EcoAnalysts staff via this report. The project manager will submit a final report prior to the conclusion of the task order. All data are tracked through use of EcoAnalysts' LIMS. The data compiled during this project are incorporated into spreadsheets and sent to the client and, if requested, will be uploaded to the client's database.

GROUP D: DATA VALIDATION AND USABILITY

D1. DATA REVIEW, VERIFICATION, AND VALIDATION

All raw data are transcribed into EcoAnalysts' LIMS. Any hard copies of raw data are organized and filed. Statistical analyses of replicate samples are recorded so that the degree of certainty can be estimated, when requested. All laboratory analytical results are cross-checked to ensure data are complete and error free. Data are archived using EcoAnalysts' LIMS on EcoAnalysts' servers, with multiple data backups in place.

D2. VERIFICATION AND VALIDATION METHODS

Project staff follows the EPA *Guidance on Environmental Verification and Validation* (EPA QA/G-8) whereby the data are reviewed and accepted or qualified by project staff.

D3. RECONCILIATION WITH USER REQUIREMENTS

Upon receipt of results of each sample group, calculations and determinations of precision and accuracy are made and, if needed, corrective action is implemented. If data quality does not meet project specifications, the deficient data are flagged and the cause of failure evaluated. For the data to be considered valid, data collection procedures, the handling of samples, and data analysis must be monitored for compliance with all the requirements described in this QAPP. Data are flagged and qualified if there is evidence of habitual violation of the procedures described in this QAPP. Any limitations placed on the data are reported to the data end user in narrative form. Any limitations on data use are detailed in the project reports and other documentation.

The purpose of this document is to describe the operation of the sediment profile imaging (SPI) system, the procedures used to collect SPI data, and the hazards associated with SPI camera deployment and operation.

9.1 SPI CAMERA OPERATION

The SPI camera system is attached to the hydrowire. The camera prism is mounted on an assembly that can be moved up and down by producing tension or slack on the winch wire. As the camera is lowered, tension on the wire keeps the prism' in the 'up' position. Once the camera frame contacts the bottom, slack on the wire allows the prism to vertically descend into the seafloor. The rate at which the optical prism penetrates into the sediments is controlled by a passive hydraulic piston. This allows the optical prism to descend at approximately 6 cm per second and minimizes disturbance to the sediment column. Once on the seafloor, the SPI camera is controlled by the descent of the prism assembly past a magnetic switch. When the magnetic switch is closed by contact with the prism assembly, a photograph of the sediment column is taken 15-seconds from the time of switch contact.

As the camera is raised off the bottom, a wiper blade automatically cleans any sediment off of the prism faceplate. The digital image is recorded on the camera's internal storage media, the strobes are recharged, and the camera can be lowered for another replicate image.

When the camera is brought to the surface, the frame count is verified and the camera prism penetration is estimated from a penetration indicator that measures the distance the prism fell relative to the camera base. If penetration is minimal, weight packs can be loaded to give the assembly increased penetration. If penetration is too great, adjustable stops (which control the distance the prism descends) can be lowered, and "mud" doors can be attached to each side of the frame to increase the bearing surface.

9.1 EQUIPMENT

To conduct a SPI survey, the following equipment is needed:

SPI Camera Components

- Benthos Sediment Profile Camera
- 12 v Nicad Battery Packs
- 12 Kilogram Lead Weights (10 Sets)
- "Mud" Doors
- Nikon D7000 Camera & Spare body
- Tool Kit
- Shackles, swivels and hardware

Positioning System

Research Vessel with winch and hydrowire having a minimum lifting capability of 400 kilos

Navigation system

9.2 FIELD COLLECTIONS

At the beginning of each survey day, the time on the data logger mounted on the SPI camera will be synchronized with the navigation system clock. A Nikon digital SLR camera and a charged battery are loaded in the camera housing. Test shots are fired on deck at the beginning of each day to verify all internal electronics systems are working according to specifications.

Each SPI station replicate will be identified by the time recorded in the image file and the corresponding time and position recorded by the navigation system. A position will be recorded for each of the three replicate images taken at each SPI station. Redundant sample logs will be kept by the field crew. Information recorded in the field log includes:

- Time
- Date
- Station Location
- Replicate ID
- Frame Count
- Water Depth
- Penetration
- Observations on weather conditions, environmental conditions, or other pertinent observations
- Sampling Crew
- Time of arrival at vessel
- Time of survey commencement
- Time of survey conclusion
- Time departing vessel

Three replicate images will be taken at each SPI station. At regular intervals during each survey day, the frame counter is checked to make sure that the desired number of replicates have been taken. If images have been missed or the penetration depth is insufficient, then proper adjustments are made (e.g., weight is added to the frame) and additional replicates are taken.

To collect SPI data, the research vessel will be piloted to the target sampling location. Once within 20 feet of the target location, the SPI camera will be deployed. It is lowered to the seafloor until it lands on the bottom. Once on the bottom, an electronic trigger is activated signaling the camera to collect an image 15 seconds after contact. Once the image set is acquired, the SPI camera is raised off the seafloor and lowered again to collect the remaining two replicate image sets.

The target production rate during the survey is approximately 50 stations per day, with three replicates per station and two images per each replicate being acquired. The rate of data

acquisition will be affected by several variables including but not limited to: winch speed, efficiency of vessel positioning, weather conditions, water depth, and transit times.

9.3 HAZARDS ASSOCIATED WITH SPI SURVEYING

The hazards associated with SPI data collections are primarily physical hazards. The SPI camera is large, heavy piece of equipment that is deployed from a research vessel or some other type of sampling platform. There are no chemical or environmental hazards associated with SPI data collection.

During assembly, mobilization and deployment of the SPI camera, the hazards are physical and mechanical in nature. The hazards include:

- Slips, Trips and Falls
- Pinching and crushing of body parts
- Strains and muscle pulls
- Exposure to the elements
- Falls overboard
- Drowning

9.4 HAZARDS RELATED TO SPI CAMERA ASSEMBLY AND MOBILIZATION

Prior to field collections, the SPI camera is assembled and mobilized upon the research platform. The camera is shipped in large crates completely disassembled. Component parts are made of high-grade stainless steel, with individual pieces weighing between 2-50 kilos. These piece are bolted together to construct a high-strength steel frame assembly. During assembly all pieces are typically resting on the ground or platform and there are no overhead hazards. Potential hazards or risks during assembly are related to:

- the pinching of body extremities while assembling the frame
- falls of component parts on fingers, hands, feet or toes
- slips, trips and falls of personnel, and
- back and muscle strain moving and lifting component parts.

Risks associated with these hazards are minimized by using safe and proper assembly techniques, hazard recognition, and workplace controls.

9.5 HAZARDS RELATED TO SPI CAMERA OPERATION

As previously described, the SPI camera is deployed from a research platform and, once deployed, operates autonomously until retrieval.

In most operations, the SPI camera is lifted off the platform and articulated over the stern or side of the research vessel. The lifting and movement is typically accomplished using a winch system coupled with a davit, boom, or A-frame. The winch controls the raising and lowering of the SPI camera system and the A-frame or equivalent controls the articulation of the camera over the

side of the platform. In some instances, the lifting point is fixed and the camera is manually guided to the water. The hazards inherent in this operation are the lifting and movement of the heavy SPI camera. Specifically hazards include:

- Falling or dropping of the SPI camera,
- Movement of the camera and trapping of personnel by the camera against a solid object such as a bulkhead, frame, or gunwhale
- Slipping while handling the camera
- Falling overboard while deploying the camera.

Furthermore, these factors can be exacerbated by weather and sea-state. The logistics of deploying the camera can be made more difficult by inclement weather such as wind and heavy rain along with platform motion caused by waves and sea-swell. These weather-related factors also cause the research platform to be less stable and increase the difficulty of conducting SPI operations. As the SPI camera must remain stationary on the seafloor for many seconds prior to retrieval, the ability of the platform to hold position influences both the success of the SPI sampling operation as well as the safety of the personnel conducting the SPI operations. If the vessel drifts while the SPI camera is on the seafloor, additional winch cable is paid out so that slack is continuously maintained until the camera is ready for retrieval.

During retrieval, the camera is winched upwards from the seafloor to the research vessel. The most hazardous portion of camera retrieval is the period of time from when the camera reaches the surface of the water until it is safely rested on the deck of the research platform. In calm seas and with an articulating lifting point, this is a safe and straightforward process. However, the difficulty of this maneuver increases with inclement weather conditions and heightened sea-state. In the event of heightened sea state, the camera is brought aboard using tag lines, with all personnel removed from the movements of the camera. Throughout the deployment and retrieval operations clear communication between the SPI camera operating personnel and personnel operating the winch/lifting device controls is maintained.

9.6 PHYSICAL HAZARDS

Gear deployment and retrieval present hazards because of the heavy weight of the sampling gear, its suspension above the deck, and the risk of accidental and premature closure. During field operations, several heavy pieces of equipment (hundreds of pounds) are used to conduct sediment surveys. This gear can include the Sediment Profile Imaging (SPI) camera, a Gray-O'Hara box corer ($0.06m^2$), and a dual van Veen grab sampler ($0.1\ m^2$). Safety pins are required to be in place on all pieces of gear, as appropriate, whenever the gear is inboard of the vessel rail. The triggering mechanism is always performed when the equipment is resting on a stable surface. All sampling gear is equipped with a ring by which the pin may be grasped for removal during deployment. If the gear or winch slips while a person's finger is inserted through this ring, the finger could be severed. Consequently, personnel are required to remove the safety pin only by grasping the outer edge of the ring between finger and thumb. During retrieval, at least one crew member watches for the appearance of the sampling gear at the water surface and alerts the winch operator. Failure to monitor gear retrieval and slow the winch upon surfacing can break the cable, cause loss of or damage the gear, or injure a crew member if the gear should fall or the

cable end should snap. Personnel will be positioned on deck to safely bring the equipment aboard.

After repeated sampling, individual strands from the winch cable may break and project from the cable. Sampling personnel are instructed to avoid contact with the moving cable unless protected by work gloves. Periodically throughout the sampling cruise, the chief scientist inspects the cable for wear, especially where the wire is attached to the sampling gear. The chief scientist and safety officer are also responsible for periodic inspection of all shackles, pins, mousing, swivels, and thimbles to ensure the integrity of all points along the hydrowire. Likewise, all on-deck crew members are encouraged to periodically inspect these linkages. The winch drum, the blocks, and the area between the gear and the rail, deck, or other large equipment all represent significant pinching and crushing hazards. Personnel are instructed to keep their hands, feet, and clothing clear of these points. Lines, hoses, hatch covers, and mud on the deck all present tripping, slipping, and falling hazards. Every crew member should make an effort to keep the working surfaces of the deck clear and clean by coiling hoses and periodically washing the deck down with seawater to remove any mud left on deck from sampling operations.

Systems Center
PACIFIC

Standard Operating Procedures for Conducting *In Situ* Toxicity and Bioaccumulation Tests with the Sediment Ecotoxicity Assessment Ring (SEA Ring) V.2.0

March 28, 2012

53475 Strothe Road
Bldg. 111 Room 116
San Diego, CA 92152-5000

619-553-0886 · 619-553-2766

7.1. Glassware and Plasticware Cleaning

I. New Plasticware – CAB Exposure Chamber Tubing, Exposure Chamber Caps, Pump Tubing

1. Condition in filtered, uncontaminated seawater overnight.
2. Rinse with deionized water.
3. Dry and store.

II. Non-disposable sample containers, test vessels, tanks and other equipment

Any equipment coming in contact with samples must be washed to remove surface contaminants as described below:

1. Rinse with tap water several times.
2. Soak in tap water and 10% Liquinox or other detergent for at least 15 minutes, and then scrub with brush.
3. Rinse in tap water several times.
4. Rinse in 10% Nitric (HNO_3) or hydrochloric (HCl) acid to remove scales, metals, and bases.
5. Rinse several times in deionized water.
6. If organic toxicant used, rinse once with pesticide grade acetone in fume hood.
7. Rinse three times with deionized water.

III. Sediment Core Tubes

A. AFTER USE

1. Soak in 2% Liquinox or other detergent for 24 hours.
2. Scrub tube gently with brush and rinse 2-3 times in tap water.
3. Dip core tubes in 10% nitric acid for 5-10 seconds.
4. Rinse thoroughly in deionized water.
5. Dispose of damaged

B. PRIOR TO NEXT USE

1. Soak in seawater for 24 hours.
2. Rinse 2-3 times in deionized water.

IV. Embryo-Larval Development *in situ* drums

A. AFTER USE

1. Remove plastic screws from ends.
2. Soak drums and screws in 2% Liquinox or other laboratory detergent for 24 hours.
3. Scrub screens very gently with brush and rinse 2-3 times in tap water.
4. Dip drums in 10% nitric acid for 5-10 seconds.
5. Rinse thoroughly (multiple times) in deionized water.

B. PRIOR TO NEXT USE

1. Soak in seawater for 24 hours.
2. Rinse 3 times in deionized water.

VI. Chemtainers

A. AFTER USE

1. Soak in 10% Nitric (HNO_3) or hydrochloric (HCl) acid solution for approximately one week; check that pH of acid solution is below 2.
2. Rinse 3 times with deionized water.

B. PRIOR TO NEXT USE

1. Soak in seawater for 24 hours.
2. Rinse 3 times in deionized water.

<u>7.2. Receiving and Holding Test Organisms</u>

This protocol is intended for receiving and holding of mysid shrimp (*Americamysis bahia*), topsmelt larvae (*Atherinops affinis*), sea urchins (*Strongylocentrotus purpuratus*), polychaete worms (*Neanthes arenaceodentata*), marine amphipods (*Eohaustorius estuarius*) and/or clams (*Macoma nasuta*):

1. Upon arrival, check temperature before placing organisms into aquarium/holding tank (6 or 22 L polycarbonate holding tanks are generally used, depending on test batch size). Test organisms should not be subjected to changes of more than 3 °C in water temperature or 3 psu in any 12-hour period.

2. The following should be recorded upon arrival (if applicable):

a. Condition of the organisms upon arrival including # of mortalities.
b. Temperature
c. Dissolved oxygen concentration
d. Salinity or conductivity
e. pH

3. In order to acclimate organisms, place shipping bag in clean aquarium/holding tank for at least 60 minutes. After initial water quality measurements are taken, the top of the bag should be propped open and water should be gently aerated. A small amount of food may be added if the organisms do not appear stressed.

4. After temperature in the shipping bag has approached appropriate holding temperature (depending on test method), remove the shipping bag and add filtered seawater to the holding tank.

5. **Mysids:** Gently siphon mysids into holding tank using a wide-bore pipette and Tygon tubing. As the mysid:water ratio in the shipping bag decreases, siphon out the excess water into a clean beaker. When all of the mysids have been transferred, rinse the bag with filtered seawater and check for mysids that may have stuck to the sides of the bag. *Loading rate for mysids should not exceed 20 mysids per liter.

   Fish Larvae: Carefully siphon off extra water from the travel bag in order to concentrate fish larvae. Gently pour larvae into clean plastic holding tank. Be sure not to transfer any fish that died during shipment. When bag level gets low, individually pipette larvae into holding tanks using a wide-bore pipette. Remove any mortalities that accidentally got transferred to holding tank.
   *****Loading rate for fish should not exceed 0.4 g fish per liter.

   Sea Urchins: If organisms are not being used immediately for obtaining gametes, carefully place urchins in a flow-through seawater tank with ample flow. Monitor urchins for induction of spawning and if observed, remove individuals promptly and place in separate holding tank. Feed urchins blades of rinsed kelp while in holding until ready for use. Optimal holding temperature is 15 ^{0}C.

   Polychaetes: Worms are generally received in small baggies containing green algae (*Enteromorpha*) for substrate and food. Gently open baggies and pour entire contents into clean holding tank. Rinse the bag with filtered seawater and check for worms that may have stuck to the sides of the bag. Add sufficient laboratory seawater to gently begin acclimation process to testing temperature and salinity.

   Amphipods: Amphipods should be ordered within a week and at least three days prior to testing date to allow for acclimation to testing conditions. Amphipods are generally received in small Tupperware containers filled with sediment from the collection site (control sediment). Gently spray sediment and amphipods into a clean holding tank with

a squirt bottle containing filtered seawater and check for amphipods that may have stuck to the sides of the container. Discard any mortalities.

Clams: Gently place clams into a clean holding tank, discard any mortalities.

6. Gently aerate each holding tank with a small airstone.

7. Relevant organisms should be fed newly hatched *Artemia* nauplii liberally and daily.

8. Check temperature frequently to make sure it is maintained at appropriate holding temperature ± 2 °C. If temperature is not maintained in range, organisms should be held an additional day prior to testing. Organisms should be acclimated for at least 2 days prior to testing.

9. Ensure that the photoperiod to be used during testing is being used during acclimation.

10. Renew holding water every other day or renew one half of the water every day. This depends on the amount of fecal matter and density of animals in the holding tank. All fecal matter, dead, etc. should be siphoned daily.

11. If the organisms need to acclimate to the testing salinity, mix filtered sea water with the appropriate amount of deionized water to obtain the desired salinity (do not adjust salinity more than 3 ppt in a 12-hr period) during water changes.

12. The following should be recorded during the holding period:

    a. Condition of the organisms upon arrival and every day thereafter.
    b. Temperature in holding tanks
    c. Frequency of water change and siphoning
    d. Dissolved oxygen level in holding tanks
    e. Frequency and approximate quantity of feeding
    f. General appearance of water (cloudy, clear, etc.) and organisms (active, dead, etc.)

13. Before disposal, any surviving test organisms are killed, generally by concentrating into a container and freezing. Under no circumstances are test organisms ever released to the wild or used more than once for testing.

7.3. Hatching Brine Shrimp and Their Use as Test Organism Food

I. Objective

Brine shrimp (*Artemia spp*) are the preferred and most convenient food for Mmysids (*Americamysis bahia*) and topsmelt larvae (*Atherinops affinis*) for toxicity testing and holding/acclimation. They are also used in post exposure feeding rate assays for sediment quality assessment (e.g. marine polychaete, *Neanthes arenaceodentata*).

II. Necessary materials and supplies

- Separatory Funnels – (2), 2-Liter capacity
- Air pump
- Plastic tubing – to provide aeration in separatory funnels
- Glass Pasteur pipettes
- Flashlight
- Dark Material – to aid in collection of brine shrimp
- Brine Shrimp (*Artemia*) cysts

Note: EPA suggests use of Brazilian or Colombian brine shrimp cysts. These can be purchased from Aquarium Products, 180L Penrod Ct., Glen Burnie, MD 21061. Other suppliers are on p.28 of EPA/600/R-95/136.

III. Methods

1. Add 1 L of seawater to a 2-L separatory funnel, or equivalent.

2. Add 10 mL or 1-2 grams of *Artemia* cysts to the separatory funnel and aerate for 24 hours at 27 °C. Actual hatching time will vary with temperature and strain.

3. After 24 hours, remove the air supply from the separatory funnel. Cover funnel with a dark cloth or paper towel while directing the beam of a flashlight through the bottom of the funnel for 5-10 minutes. *Artemia* are phototactic, and will concentrate at the bottom of the funnel. Do not leave concentrated nauplii at bottom for more than 10 minutes without aeration, or they will die.

4. Drain the nauplii into a funnel fitted with a <150 µm Nitex or stainless steel screen, and gently rinse with seawater.

5. Gently spray nauplii into a beaker and fill until desired concentration is reached.

6. Approximately 40-50 nauplii per feeding per test organism is targeted for most tests. In order to feed 10 organisms, this requires 200 µl of a suspension with a density of 2000 nauplii/ml. This concentration can be achieved by dilution or concentration of nauplii following cell counts under a light microscope. For test protocols using 5 organisms per beaker, 100 µl of the suspension would be used.

7.4. SEA Ring setup for Water Column Testing

I. Objective

Assess acute *in situ* exposure and effects in the water column (e.g. sediment overlying water, storm water discharges, and other discharges) using mysids (*Americamysis bahia*), topsmelt larvae (*Atherinops affinis*), polychaetes (*Neanthes arenaceodentata*) and/or sea

urchin embryos (*Strongylocentrotus purpuratus*). The test endpoint is survival for the mysid, fish larval exposure, normal larval development for the embryo exposures, and survival and/or post exposure feeding rate for the polychaete exposures.

II. Necessary materials and supplies

- Test organisms + 10% for incidental mortalities (mysid/fish only)
- Exposure chambers and caps, pre-soaked in seawater.
  - Mysid/fish exposure: 5" exposure chambers.
  - Embryo exposure: 20µm screen embryos drums with screws.
- Dilution water – natural
- Pipets, automatic – adjustable, to cover a range of 0.01 to 5 ml and pipette tips
- Wash bottles – for seawater for rinsing glassware
- SEA Ring
- Computer
- Charging and AC adaptor cords
- Programming cord
- Flat head screwdriver
- Plastic transfer pipets
- Solo cups 1oz. soufflé cups
- Light box
- Small plastic funnel
- Pyrex dish

III. Methods

A. PROGRAMMING THE SEA RING

1. Attach programming cord to SEA Ring and to a PC and start SEA Ring Application. Note: On/Off switch does not need to be in a particular setting. SEA Ring will still communicate with a PC whilst in the "off" position. Never attempt to program the SEA Ring while set in water. Never connect both the serial debug cable and the main programming cable into the SEA Ring at the same time.
2. Press the **Set time** button to synchronize the SEA Ring internal clock to the PC.
3. Press the **Delete data** button to clear the SEA Ring of previously stored data or programs.
4. Enter in Start time, Start date, Stop time and Stop date for the desired program Note: Use military (24 hour) time.
5. Enter in the desired amount of time for chamber flushing (i.e. pump on).

Note: Pump operates at an estimated 100 ml/min. If using a 5” exposure chamber with an internal volume of approximately 500 ml, a full turnover of internal waters will take approximately 5 min.

6. Enter in the desired amount of time for chamber flush interval (i.e. pump off).

Example: For a four day exposure with 20 turnovers per day (24 exchanges of overlying water per day):

Start time:	**13:00**
Start date:	**03/05/2012**
Stop time:	**13:00**
Stop date:	**03/09/2012**
Chamber flush duration (min):	**1**
Chamber flush interval (min):	**14**
Total # times pump turns on:	**384**

7. Press the **Upload settings** button to program the SEA Ring.
8. Note programming details on data sheet.
9. Disconnect programming cord and replace connector cap.
10. Switch On/Off switch to “ON”

Note: Two indicator LEDs should periodically illuminate when placed in the “ON” position. The left LED indicates battery status and the right LED indicates program status:

Battery status indicator:

LED Blink Sequence:	**Status:**
One flash	OK
Two flashes	Low battery warning (<7.3 volts)
Three flashes	Low battery shutdown (@ 6.5 volts)

Operation/Program mode indicator:

LED Blink Sequence:	**Status:**
One flash	OFF
Two flashes	Programmed with delayed start
Three flashes	Active program operating

B. PREPARATION OF EXPOSURE CHAMBERS AND SEA RING

Note: All tubing, filters, fittings, connectors and valves should be previously cleaned and conditioned prior to use.

1. Place 500 µm Nitex mesh inserts into inlet and outlet ports on chamber cap and secure.

   Note: Inlet filter size = 2 cm diameter (roughly the size of a nickel);
   Outlet filter size = 1.8 cm diameter (roughly the size of a dime).
2. Secure inlet connector and duck bill valves to chamber cap.
3. Secure pre-filter to top of SEA Ring and connect tubing to manifolds.
4. Fit 5” exposure chambers with solid end cap on bottom of chamber and chamber cap on top and place into SEA Ring.
5. Align exposure chamber and cap holes with chamber holder hole and secure retaining pin.
6. Submerge SEA Ring into Chemtainer (previously cleaned and conditioned) filled with seawater.
7. Temporarily activate pump to remove air bubbles that may exist in tubing.

   Note: Do not secure syringe port stopper into place before addition of organisms.

C. LOADING ORGANISMS INTO SEA RING – MYSIDS AND/OR FISH LARVAE

1. Count out organisms over light box in groups of 5 into plastic Solo cups.
2. For quality control, a second person should double check organism counts and condition.
3. Place a funnel into syringe port of chamber cap.

   Note: To prevent overflow of water from chamber and potential loss of organisms, some water may need to be siphoned from the exposure chambers prior to addition.
4. Gently pour desired number of organisms into funnel ensuring that they enter the exposure chamber. Rinse Solo cup and funnel with dilution water as necessary.
5. Gently replace syringe port stopper into syringe port and secure screws.

6. Note time of organism introduction into SEA Ring chambers on data sheet.

D. LOADING ORGANISMS INTO SEA RING – EMBRYO DRUMS

Note: Embryo drums must be placed inside exposure chamber prior to placement into SEA Ring.

1. Prepare stock of fertilized eggs with an approximate density of 300 cells/ml.
2. Place one screw into embryo drum and tighten.
3. Submerge embryo drum in seawater just to the top edge of the second hole.
4. Pipette 1 ml of thoroughly homogenized stock solution to target a loading density of approximately 300 cells/drum.
5. Carefully place second screw into hole and tighten.
6. Gently tap sides of drum while submerged to release any air bubbles caught inside drum.
7. Place embryo drum inside exposure chamber and secure caps as described above.
8. Carefully place exposure chambers into SEA Ring and submerge the SEA Rings into the Chemtainer filled with seawater.
9. Gently replace syringe port stopper into syringe port and secure.
10. Note time of organism introduction into SEA Ring chambers on data sheet.

E. SEA RING DEPLOYMENT

1. Transfer Chemtainer and SEA Ring set-up to deployment site.
2. While submerged in site water, gently remove SEA Ring from Chemtainer, paying close attention not to disrupt tubing and/or manifold connections.
3. Secure SEA Ring to selected anchoring point.
4. Note time of deployment on data sheet.
5. Ensure that LEDs are flashing as appropriate and SEA Ring (and water quality sonde, if used) is secure.

F. SEA RING RECOVERY

1. Make initial observations of SEA Ring condition (hoses, LED status, organism movement, overall integrity) if possible.
2. Disconnect anchor points on SEA Ring.
3. Slowly place SEA Ring in its already submerged Chemtainer.
4. Carefully retrieve entire Chemtainer and SEA Ring set-up and bring to surface.
5. Switch On/Off switch to “OFF”
6. Note time of recovery on data sheet.

7. Return to lab or staging area for breakdown and assessment.

G. RECOVERY OF ORGANISMS – MYSIDS AND/OR TOPSMELT

1. Disconnect tubing from chamber caps.
2. Remove retaining pin on chamber holder.
3. Carefully remove exposure chamber.
4. Gently remove chamber cap.
5. Enumerate surviving organisms and note any mortalities observed.
6. If necessary, gently pour contents of exposure chamber into Pyrex dish and rinse chamber with dilution water to more accurately count surviving organisms.

H. RECOVERY OF ORGANISMS – EMBRYO DRUMS

1. Prepare/label a scintillation vial for each embryo drum.
2. Place small funnel in scintillation vial.
3. Disconnect tubing from chamber caps.
4. Remove retaining pin on chamber holder.
5. Carefully remove exposure chamber.
6. Gently remove chamber cap.
7. Carefully remove embryo drum from exposure chamber.
8. While keeping embryo drum submerged half way, remove one of the screws, being careful not to submerge the entire drum which might cause a loss of embryos.
9. Place finger over open hole and invert drum over small funnel placed into scintillation vial.
10. Remove finger from hole and gently tap sides of drum to evacuate contents of embryo drum.
11. Remove second screw from drum and briefly rinse drum with filtered seawater making sure not to overflow scintillation vial.

    Note: If needed, contents of scintillation vial may need to be filtered on a 20µm screen to concentrate embryos and then reintroduce to vial to reduce final volume in vial.
12. Terminate test by addition of 1mL of concentrated formaldehyde and record the time on data sheet.
13. Observe embryos within one week of preservation. For each test replicate, the proportion of normal to abnormal larvae will be determined.

I. DOWNLOADING DATA FROM SEA RING

1. **Ensuring that the programming port is dry, attach the programming cord to the SEA Ring and to a PC and start the SEA Ring Application.**

2. **Press the Offload button and save the file in a designated folder. This file is a comma separated file and can be opened in Excel.**

   <u>Note</u>: The data in the SEA Ring is stored in non-volatile memory, meaning that if the battery goes flat, the data will not be lost.

J. SEA RING GENERAL CLEANING PROCEDURE

1. **Soak in tap water and 2% Liquinox or other detergent for at least 15 minutes, and then scrub with brush.**
2. Rinse in tap water several times.

<u>7.5. SEA Ring Setup for Sediment Testing</u>

I. Objective

Assess *in situ* sediment quality with benthic invertebrates (e.g. polychaetes, oligochaetes, amphipods, clams) using modifications of standard toxicity and bioaccumulation testing protocols.

II. Necessary materials and supplies

- Test organisms + 10% for incidental mortalities
- Exposure chambers and caps, pre-soaked in seawater.
  - Polychaete and amphipod: 10 or 12" open ended exposure chambers.
  - Clam: 10 or 12" exposure chambers with ½" stainless steel mesh on bottom.
- Dilution water – appropriate laboratory natural seawater or deionized water.
- Wash bottles – for seawater for rinsing glassware
- SEA Ring
- Deployment bracket and poles
- Syringe deployment plate
- Laptop computer
- Charging and AC adapter cords
- Programming cord
- Flat head screwdriver
- Plastic transfer pipets
- Solo cups 1oz. soufflé cups
- Modified 30ml syringes with silicone stopper, for retaining organisms
- Light box
- Small plastic funnel
- Pyrex dish
- Stainless steel sieves (typically 500 µm) for recovering organisms at test end.

III. Methods

A. PROGRAMMING THE SEA RING

1. Attach programming cord to SEA Ring and to a PC and start SEA Ring Application.

   Note: SEA Ring on/off switch does not need to be in a particular setting. SEA Ring will still communicate with a PC while in the "off" position. Never attempt to program the SEA Ring while set in water. Never connect both the optional serial debug cable (not provided with all SEA Rings) and the main programming cable into the SEA Ring at the same time.
2. Press the **Set time** button to synchronize the SEA Ring internal clock to the PC.
3. Press the **Delete data** button to clear the SEA Ring of previously stored data or programs.
4. Enter in Start time, Start date, Stop time and Stop date for the desired program
   Note: Use military (24 hour) time
5. Enter in the desired length of time for chamber flushing (i.e. pump on).
   Note: Pump provides even flow to chambers at an estimated 100 ml/min. The internal volume of sediment and overlying water chambers is approximately the same (500 mL) assuming sediment chambers are half full of sediment). Based on flow rate, one full turnover of the overlying water will require approximately 5 minutes of flush time. Set chamber flush rate depending on number of turnovers desired per day based on site-specific requirements.
6. Enter in the desired amount of time for chamber flush interval (i.e. pump off).

Example: For a 14 day exposure with 14 turnovers per day (14 exchanges of overlying water per day):

Start time:	**13:00**
Start date:	**03/05/2012**
Stop time:	**13:00**
Stop date:	**03/19/2012**
Chamber flush duration (min):	**1**
Chamber flush interval (min):	**19**
Total # times pump turns on:	**1008**

7. Press the **Upload settings** button to program the SEA Ring.
8. Note programming details on data sheet.

9. Disconnect programming cord and replace connector cap.
10. Switch On/Off switch to “ON”
    Note: Two indicator LEDs should periodically illuminate when placed in the “ON” position. The left LED indicates battery status and the right LED indicates program status:

    Battery status indicator:

LED Blink Sequence:	Status:
One flash	OK
Two flashes	Low battery warning (<7.3 volts)
Three flashes	Low battery shutdown (@ 6.5 volts)

    Operation/Program mode indicator:

LED Blink Sequence:	Status:
One flash	OFF
Two flashes	Programmed with delayed start
Three flashes	Active program operating

B. PREPARATION OF EXPOSURE CHAMBERS AND SEA RING

Note: All tubing, filters, fittings, connectors and valves should be previously cleaned and conditioned prior to use.

1. Place 500 µm Nitex mesh inserts into inlet and outlet ports on chamber cap and secure.
   Note: Inlet filter size = 2 cm diameter (roughly the size of a nickel);
   Outlet filter size = 1.8 cm diameter (roughly the size of a dime).
2. Secure inlet connector and duck bill valves to chamber cap.
3. Secure pre-filter to top of SEA Ring and connect tubing to manifolds.
4. Fit 10-12” exposure chambers with chamber cap on top and place into SEA Ring.
5. Align exposure chamber and cap holes with chamber holder hole and secure retaining pin.
6. Secure aluminum bracket and deployment plate to top of SEA Ring.
7. Submerge SEA Ring into Chemtainer (previously cleaned and conditioned) filled with seawater.

8. Temporarily activate pump to remove air bubbles that may exist in tubing.
   Note: Do not secure syringe port stopper into place before addition of organisms.

C. LOADING ORGANISMS INTO SEA RING – POLYCHAETES, AMPHIPODS

1. Count out organisms over light box in groups of 5 into plastic Solo cups.
2. For quality control, a second person should double check organism counts and condition.
3. Carefully transfer organisms into seawater filled 30 mL plastic syringes and place silicone stopper on end of syringe.
4. Place syringe into syringe port and secure screws, being sure not to depress syringe, as it will inadvertently release organisms into chamber before start of desired exposure period.
5. Note time of organism introduction into SEA Ring chambers on data sheet.

D. LOADING ORGANISMS INTO SEA RING – CLAMS

Note: Clams should be placed inside exposure chamber prior to placement into SEA Ring.

1. Place desired number of clams inside exposure chambers fitted with ½" stainless steel mesh on bottom, and secure chamber cap as described above.
2. Carefully place exposure chambers into SEA Ring and submerge the SEA Rings into the Chemtainer filled with seawater.
3. Be sure syringe port stopper is in syringe port and secure screws.
4. Note time of organism introduction into SEA Ring chambers on data sheet.

E. SEA RING DEPLOYMENT

1. Transfer Chemtainer and SEA Ring set-up to deployment site.
2. While submerged in site water, gently remove SEA Ring from Chemtainer, paying close attention not to disrupt tubing, manifold connections, or organism-filled syringes.
3. *If deploying without divers*, attach deployment poles to steel bracket as is required by depth of deployment location.
4. Push SEA Ring into surficial sediment at desired exposure location firmly with poles until base plate of SEA Ring is even with the sediment surface (approximately 5" beneath sediment surface).
5. Gently depress plunger on organism-filled syringes to release organisms into exposure chamber.
6. *If deploying without divers,* pull release pin to recover poles from SEA Ring.

7. Note time of deployment on data sheet.
8. Ensure that LEDs are flashing as appropriate and SEA Ring (and water quality sonde, if use) is secure.

F. SEA RING RECOVERY

Note: At time of writing this SOP, diver support is required for this step.

1. Bring Chemtainer to sea floor for recovery.
2. Make initial observations of SEA Ring condition (hoses, LED status, organism movement, overall integrity) if possible.
3. Switch On/Off switch to "OFF"
4. Dig around bottom of chambers and place plastic end cap (slitted) over opening of chambers one at a time. (Note: clam chambers do not require end caps).
5. Remove SEA Ring from sediment and place in Chemtainer.
6. Note time of recovery on data sheet.
7. Return to lab or staging area for breakdown and assessment.

G. ORGANISM RECOVERY

1. Disconnect tubing from chamber caps.
2. Remove retaining pin on chamber holder.
3. Carefully remove exposure chamber.
4. Gently remove chamber cap.
5. Sieve contents of exposure chamber through a 500 µm sieve using running seawater into Pyrex dish.
6. Enumerate surviving organisms and note any mortalities observed and record on data sheet.
7. If required, collect organisms for subsequent measurements and/or prepare for depuration in uncontaminated dilution water prior to freezing for chemical analysis.

H. DOWNLOADING DATA FROM SEA RING

1. Ensuring that the programming port is dry, attach the programming cord to the SEA Ring and to a PC and start the SEA Ring Application.
2. Press the Offload button and save the file in a designated folder. This file is a comma separated file and can be opened in Excel.

Note: The data in the SEA Ring is stored in non-volatile memory, meaning that if the battery goes flat, the data will not be lost.

I. SEA RING GENERAL CLEANING PROCEDURE

1. Soak in tap water and 2% Liquinox or other detergent for at least 15 minutes, and then scrub with brush.
2. Rinse in tap water several times.

May 25, 2016

STANDARD OPERATING PROCEDURE

DETERMINATION OF CONCENTRATIONS OF FREELY-DISSOLVED PCB CONGENERS IN SEDIMENT POREWATER VIA *IN SITU* DEPLOYMENT OF SOLID PHASE MICROEXTRACTION (SPME) FIBERS

Scope: This Standard Operating Procedure (SOP) described the methods to be followed for the *in situ* deployment of Solid Phase Microextraction (SPME) samplers in sediment, for the measurement of freely-dissolved concentrations of PCBs in porewater.

Purpose: The purpose of this procedure is to establish a uniform method of preparing, deploying, collecting and processing SPME samplers to assure quality control in field and lab operations.

Equipment:

SPME Preparation:

- SPME fiber with 10-µm thickness polydimethylsiloxane (PDMS) coating, 210-µm silica core diameter, obtained from Fiber-guide Industries, Stirling, NJ ("SPC210/230R, No Jacket, CL-0097-1")
- 110-µm stainless steel mesh
- 24-gauge stainless steel wire
- Scissors
- 50:50 mixture of reagent grade Milli-Q (MQ) water:acetonitrile
- 80:20 methanol:MQ water solution containing polychlorinated biphenyl (PCB) Performance Reference Compounds (PRCs)
- Toluene
- Kimwipes
- Aluminum foil
- Ziplocks

SPME Deployment and Retrieval:

- Prepared SPME samplers
- Sample labels
- Core tubes
- SEA Rings
- Aluminum foil
- Ziplocks
- Coolers and ice

- Tupperware container

SPME Processing:
- 2-mL amber autosampler vial for each station
- Kimwipe
- 50:50 mixture of MQ water:acetonitrile
- Ultrapure hexane
- Teflon coated forceps
- Nitrile gloves

Procedures:

In situ measurement of tri-, tetra-, penta-, and hexachlorinated biphenyl congeners in sediment porewater will be performed by the following procedure, adapted from You et al. (2007), Yang et al. (2008), Lu et al. (2011), Oen et al. (2011), and Harwood et al. (2012). The procedure is as follows:

1. SPME Sampler Preparation

    a. Each SPME sampler consists of 200 cm of SPME fiber (sixteen 12.5-cm pieces of fiber with 10-µm thickness polydimethylsiloxane (PDMS) coating, 210-µm silica core diameter, obtained from Fiber-guide Industries, Stirling, NJ ("SPC210/230R, No Jacket, CL-0097-1"); 0.06908 µL PDMS/cm PDMS). The 16 fiber pieces are contained within a 110-µm stainless steel mesh envelope approximately 14 cm by 2 cm (when folded up). The envelope has a 10-cm piece of 24-gauge stainless steel wire placed through a hole pierced at the end of the envelope (to facilitate attachment to the core sampler).

    b. Steps to construct the SPME sampler

        i. Cut a 3- × 16-cm piece of stainless steel mesh, fold into open envelope.

        ii. Place envelope on a piece of scrap cardboard and gently pierce a hole through the end of the envelope with a push pin.

        iii. Cut 16 12.5-cm pieces of SPME fiber, insert into steel mesh envelope, and fold enveloped closed.

        iv. Cut a 10-cm (approximate) length of 24-gauge stainless steel wire and thread through the open hole. Bend the wire so that it will not separate from the envelope.

    c. Rinse the envelope containing the SPME fiber thoroughly with a 50:50 mixture of reagent grade (MQ) water:acetonitrile to remove any impurities, followed by 3X rinse with MQ water.

d. Immerse 10 to 20 SPME-containing envelopes (or more) in a 1-L amber glass jar containing a 900 mL of an 80:20 methanol:MQ water solution containing polychlorinated biphenyl (PCB) Performance Reference Compounds (PRCs; 0.2 µg/mL for each PRC) PCB-29 (Trichlorinated homolog PRC), PCB-69 (Tetrachlorinated homolog PRC), PCB-104 (Pentachlorinated homolog PRC), and PCB-154 (Hexachlorinated homolog PRC).

   i. PRCs are needed to model the uptake rates and concentrations of PCBs in porewater using the SPME field data. PRCs used here are not expected to be detected in most environmental samples as these congeners comprise less than approximately 1% (by mass) of common commercial PCB Aroclor mixtures (Frame et al., 1996). These PRCs cover the range of PCB congeners likely to be found in bioavailable concentrations in sediment porewater (e.g., 98% of the PCB mass detected in invertebrates exposed to Bremerton sediment were PCBs with 3-6 chlorines (i.e, tri-, tertra-, penta-, and hexachlorinated biphenyls).

   ii. Prepare the four PRC stock solutions by dissolving neat PCBs in toluene. For example, add 5 to 50 mg PCB to 10 mL toluene to create a 500-5000 µg/mL stock solutions. Aliquots of the toluene stock solutions can then be added to the 80:20 methanol:MQ water solution.

   iii. The PRC solution can be re-used multiple times.

e. Mix the amber jar continuously at 25 rpm on a mechanical roller for 24 hours at room temperature to allow PDMS SPME fiber coating to attain a concentration of approximately 200-1000 ng/mL PDMS for each PCB congener PRC.

f. After PRC exposure, remove the envelopes, blot dry on with a KimWipe and allow to air-dry (< 10 minutes), wrap each SPME envelope individually in rinsed aluminum foil (50:50 mixture of MQ water:acetonitrile to remove any impurities, followed by 3X rinse with MQ water), place in a sealed plastic bag, and store at 4°C until field deployment.

g. Steps 1c-1f will be performed 2 weeks or less prior to field deployment to avoid potential loss of PRCs from the fiber.

2. SPME Field Deployment

a. Ship SPME-containing envelopes to the field (individually wrapped in foil within plastic bag, stored at 4°C). Always ship at least 5 extra SPME-containing envelopes, as at least 3 SPMEs will be used as field blanks required to determine *in situ* SPME sampling rates (see below).

b. Day 0 deployment (for details see attached Field Protocols 1 and 2)

   i. Maintain SPMEs in their aluminum foil in cooler at 4°C until minutes before deployment. If the SPME is exposed to the ambient environment (open atmosphere, warm temperatures) for more than 15-20 minutes, significant amounts of the PRCs present on the fiber will be lost to the atmosphere.

   ii. Attach SPMEs to core tubes or SEA Ring tubes and deploy as described in the Field Deployment Protocols. Multiple envelopes can be attached to the same core tube (in 2014, at each station, one envelope was attached to the SEA Ring,

and two envelopes were attached to a core tube). The SPMEs should be attached to the SEA Ring/core tube and deployed just prior to deployment into the sediment (minutes before). Excess wire protruding from the outside of the core liner must be covered with duct tape because it poses a safety hazard to the divers in that it has the potential to compromise the integrity of the dive suit.

iii. At one of the stations, perform the SPME Field Blank Protocol to obtain the 3 field blanks (for details see attached Field Protocol 3). **This is mandatory and must be performed on the day the SPMEs are deployed**.

c. Day 14 retrieval (for details see attached Field Retrieval Protocols 4 and 5)

i. Core tubes: Obtain the sediment-filled core tube (with SPME envelope) and ship back to the laboratory (maintain at 4°C).

ii. SEA Rings: After SEA Ring retrieval, place SPME envelope in aluminum foil and then in Ziploc bag. Do not wipe/clean envelope; attempt to maintain contact between any sediment present and envelope. Maintain at 4°C prior to extraction.

3. Extraction of SPME Fiber with Solvent

a. If SPME envelope is maintained inside sediment core after core removed from sediment substrate, clip wire on outside of core tube, remove SPME envelope from core tube, and remove remaining wire from envelope. Sediment may be saved (or not). Place SPME envelopes in labeled plastic bags and store at 4°C until they can be processed all at once (ideally within hours of removal of sediment).

b. Pre-weigh (and record weight) an empty, labeled 2-mL amber autosampler vial to ± 0.0001 g (i.e., 4-places).

c. Open envelope and remove the 16 12.5-cm fiber pieces with Teflon-coated forceps or manually wearing nitrile gloves.

d. Wipe each fiber gently on a tissue (Kimwipe) moistened with MQ water to remove sediment particles and colloids that may/may not be visible to the naked eye.

e. If pieces are missing, this is not a problem. If fiber pieces are present that are too small to be wiped or handled efficiently, it is OK to discard these pieces. Ideally person #1 will perform this step, handing each cleaned SPME fiber to person #2 for remaining steps.

f. Cut the SPME fiber pieces into small lengths with sharp scissors (scissors first rinsed with 50:50 mixture of MQ water:acetonitrile to remove any impurities, followed by rinse with MQ water) and place the entire amount (should be 150 cm or less) of fiber in a single 2-mL amber autosampler vial. It is efficient to cut 5 or 6 fibers at a time (i.e., stack 5 or 6 fibers together and cut).

g. The fiber from an additional envelope (i.e., 16 additional fiber pieces) can be composited into the 2-mL vial (this was performed for the 2014 core tubes).

h. Weigh (and record weight) of the labeled 2-mL amber autosampler vial containing the fiber pieces to ± 0.0001 g (i.e., 4-places).

i. Subtracting the weight of the empty vial provides the weight of the fiber in the vial, which is needed to estimate the length of the fiber that was extracted by dividing the weight of the fiber by 0.000834 g/cm. The lengths of the fiber pieces can also be measured with a ruler, although this is more time consuming.

i. Add 1.8 mL of ultrapure hexane to the autosampler vial to extract PCBs from the fiber (two 900-µL aliquots via pipettor) and cap.

j. Store and ship the hexane extract (containing the fiber) to the analytical lab (maintain at 4°C during storage and shipping).

k. Between samples, rinse forceps, gloves, and scissors with 50:50 MQ water:acetonitrile, then MQ water. This avoids sample cross-contamination.

4. PCB Congener Analysis of the SPME Fiber Extract

a. In the analytical lab, the 1.8-mL extract will be spiked with external surrogate recovery standards (PCB 34, PCB 165, and PCB 209 in the baseline and PCB-209 in subsequent monitoring events) and evaporated to a volume of approximately 100 or 200 µL with pure nitrogen (performed just prior to analysis via GC).

b. The concentrated hexane extract will be analyzed for PCB via GC using USEPA method 8082 (2-µL injection into GC).

c. Analytical laboratory will report the total PCB masses in the extract (ng) for each congener. Masses of congeners extracted from the fiber will be corrected for the average percent recovery of the external surrogate(s):

$$Corrected\ \ PCB\ Mass = \frac{\text{Uncorrected PCB Mass}}{\left(Average\ \%\ \text{external surrogate recovery} \div 100\%\right)}$$

5. Calculation of Concentration of PCB Porewater in Sediment

a. The mass of each PCB congener in the hexane extract will be used to estimate the concentration in the SPME's PDMS coating assuming known fiber volume.

b. Sampling rate correction factors (CFs) are necessary because the 2-week deployment is not sufficient for the SPME's PDMS coating to reach steady state equilibrium with the porewater. CFs for each congener are determined for each sampler, as based on the concentration of PRC remaining in the PDMS each of the field-deployed SPMEs compared to the concentration measured in the field blank SPMEs (Oen et al., 2011). The following procedure is used for each sample:

i. CF is estimated by the following equation, where $PDMS_{t=14}$ is the concentration of the PRC in the SPME's PDMS coating following the 14-d field deployment (obtained from the SPME exposed to the field sediment for 14 d) and $PDMS_{t=0}$ is the concentration of the PRC in the PDMS at the start of the field exposure (obtained from the field blank SPME):

$$CF = \frac{1}{\left(\frac{[PDMS_{t=0}] - [PDMS_{t=14}]}{[PDMS_{t=0}]}\right)}$$

Four CFs will be calculated (a CF for each fo the tri-, tetra-, penta-, and hexachlorinated biphenyl PRCs).

ii. A linear regression model is developed from the linear relationship between the Log_{10} of the four CF values (Log_{10} CF) and the fiber:water partition coefficient (K_{fs}) for the PRC (obtained from Polymer 678 model values presented in Table S5 of Smedes et al., 2009):

$$log_{10}CF = mK_{fs} + b$$

where: m = slope and b = y-intercept.

iii. The regression model developed for each sampler is then used to calculate the CF for each congener measured in the sampler, using the K_{fs} for the congener (Smedes et al., 2009) according to the following equation:

$$CF = 10^{mK_{fs}+b}$$

c. If the model-predicted CF for a congener is greater than 100, this indicates the sampling period was such that less than 1% of steady state concentrations were reached. In this case, sampling conditions are considered insufficient to quantify an accurate and precise CF value. CF values for congeners greater than 100 are reported as "> 100" and further calculations to estimate the concentration of this freely-dissolved congener in the sample are not executed.

d. If the model-predicted CF for a congener is less than or equal to 100, the concentration of each non-PRC PCB congener in the SPME's PDMS coating ([PDMS PCB]) is used to derive the concentration of freely-dissolved PCBs ([Sediment porewater PCB]) according to the following relationship (You et al., 2007; Yang et al., 2008):

$$[sediment\ porewater\ PCB] = CF \times \frac{[PDMS\ PCB]}{K_{fs}}$$

<u>Method Detection Limit</u>

The average method detection limit (MDL) for freely-dissolved PCB in porewater for the above method is approximately 0.02-0.03 ng/L for tri-, tetra-, penta-, and hexachlorinated biphenyls.

<u>QA/QC</u>

QA/QC for the SPME porewater method will involve the following:

1. Field Blank

a. <u>Analysis of 3 field blanks are required for each sampling event</u>, as the data will be used to provide $PDMS_{t=0}$ data for the four PRCs.

   b. After deployment and retrieval of the field blank (Field Protocol 3), ship back to the lab, and store (maintain at 4°C).

   c. Extract the field blank SPMEs with solvent as described above.

2. Duplicate

   a. Deploy two SPME-containing envelopes in the same Sea Ring (different chambers) to evaluate precision.

3. Trip Blank

   a. Analysis of 3 trip blanks to determine the mass of PRCs that potentially desorb from exposure to water column during sample deployment

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SPME Field Guide Overview

Day 0:

1. Deploy SPMEs in core tubes (See Field Protocol 1).
2. Deploy SPMEs in SEA Rings (See Field Protocol 2).
3. Perform SPME Field Blank Protocol (See Field Protocol 3).
4. Ship the 3 SPME Field Blanks (keep cold – 4°C) to the lab for extraction.
5. Ship the 3 SPME Trip Blanks (keep cold – 4°C to the lab for extraction).

Day 14:

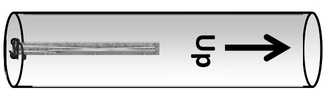
1. Retrieve SPMEs in core tubes (See Field Protocol 4).
2. Retrieve SPMEs in SEA Rings (See Field Protocol 5).
3. Ship the SPMEs (keep cold – 4°C) to the lab for extraction.

<u>Field Protocol 1: SPME Field Deployment Protocol (Core Tube Protocol (non-SEA Ring))</u>

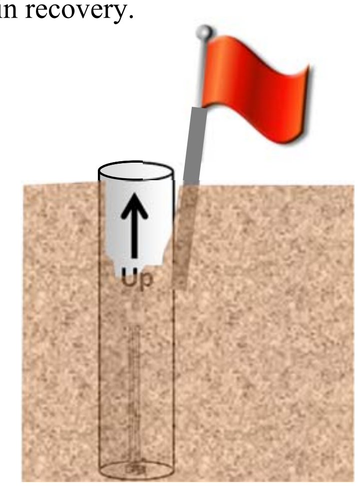
1. Take a 1-ft or 20-in long plastic sediment core tube, mark an "UP" and "up-arrow" as indicated below. On the bottom of the core tube, puncture two holes (with a push-pin) approximately 1-cm apart and 0.5 to 1 cm from the bottom.

2. Use bright or white duct tape to mark core liners. Permanent marker is difficult for the divers to discern once under water.

3. Immediately (less than 10-15 minutes) prior to deployment into the sediment, take 1 SPME sampler envelope, hold it up to light/sun to verify fibers are contained within the envelope, and attach the envelope to the core tube (envelope INSIDE the core tube) via threading the wire through the holes in the core tube and twisting the wire. Tape over the wire on the outside of the core tube so it won't poke the divers.

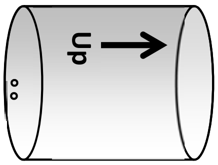


4. <u>For the 1-ft long core tube</u>, insert core tube in sediment until sediment within the core tube covers the top of the SPME envelope. Due to compression of sediment in core tube**<u>, it is likely that almost the entire length of the core tube will need to be pushed into the sediment</u>**. <u>If a 20-inch tube is used</u>, insert tube so that 12 inches of the tube is buried in the sediment and 8 inches is above sediment. DO NOT TWIST OR SCREW THE CORE TUBE INTO THE SEDIMENT. If it is too difficult to push the core in, relocate placement. Place flagging or other marker to assist in recovery.

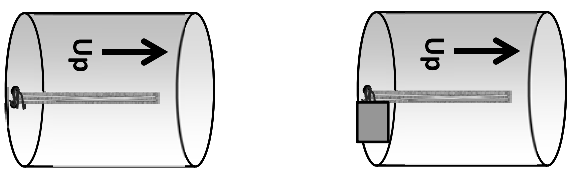


Field Protocol 2: SPME Field Deployment Protocol (SEA Ring)

1. Take a SEA Ring plastic tube, mark an "UP" and "up-arrow" as indicated below. On the bottom of the tube, puncture two holes (with a push-pin) approximately 1-cm apart and 0.5 to 1 cm from the bottom.



2. Immediately (less than 10-15 minutes) prior to deployment into the sediment, take 1 SPME sampler envelope, hold it up to light/sun to verify fibers are contained within the envelope, and attach the envelope to the tube (envelope INSIDE the tube) via threading the wire through the holes in the core tube and twisting the wire. Tape (duct tape) over the exposed wire so that it does not present a poke hazard to the divers.

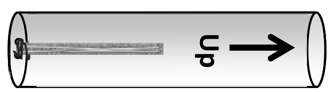


3. Attach tube to SEA Ring (UP arrow pointing upwards to top of SEA Ring) and deploy SEA Ring in sediment.

<u>Field Protocol 3: SPME Field Blank Protocol (On Day 0 of Deployment)</u>

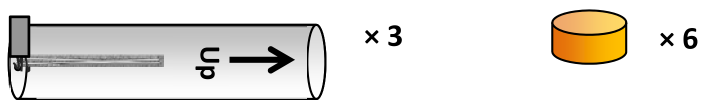
1. Take a 1-ft long plastic sediment core tube, mark an “UP” and “up-arrow” as indicated below. On the bottom of the core tube, puncture two holes (with a push-pin) approximately 1-cm apart and 0.5 to 1 cm from the bottom.

2. Immediately (less than 10-15 minutes) prior to deployment into the sediment, take 1 SPME sampler envelope, hold it up to light/sun to verify fibers are contained within the envelope, and attach the envelope to the core tube (envelope INSIDE the tube) via threading the wire through the holes in the core tube and twisting the wire. Tape (duct tape) over the exposed wire so that it does not present a poke hazard to the divers.



3. Repeat steps 1 and 2 so that **Three** tubes are ready to deploy.

4. Send both tubes down and 4 core caps with diver underwater to the sediment surface at one of the stations.

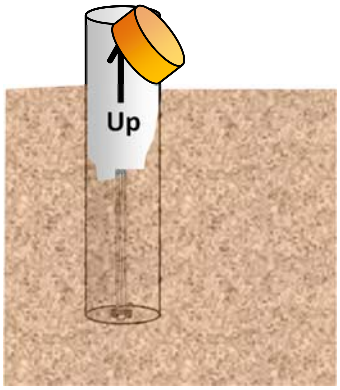


5. Cap both tubes (will contain water) and send to surface.

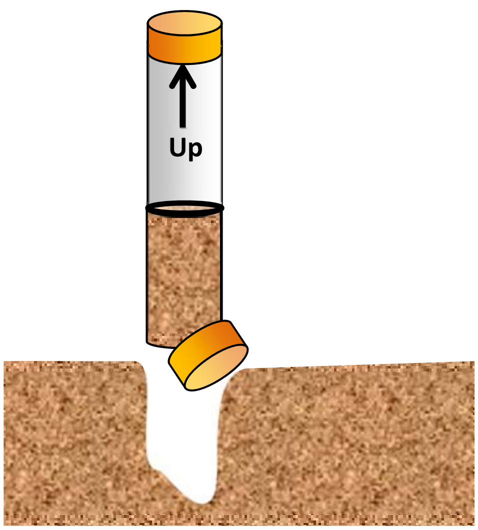
6. At surface, discard water, clip wire holding SPME envelope to core tube, blot envelope dry with paper towel, wrap both envelopes (singly) in aluminum foil, place in labeled Ziploc bag (“F### and F###”, e.g., “F023 and F024”), and store at 4°C until SPME fiber extraction. **<u>Perform extraction of the field and trip blanks within 7 days (ASAP); do not wait 14 days for other SPMEs (the ones being deployed in sediment) to be ready.</u>**

Field Protocol 4: SPME Field Retrieval Protocol (Core Tube Protocol (non-SEA Ring))

1. Take 2 core caps to sample station and locate core tube.



2. Pull the core tube from the sediment, retaining a sediment sample. Cap bottom end of core tube to prevent sample loss as core is pulled out. If sediment sample not retained, cap core tube anyway.



3. Take core to surface.
4. If sediment sample is not present in core tube, discard water, clip wire holding SPME envelope to core tube, blot envelope dry with paper towel, wrap envelope in aluminum foil, place in labeled Ziploc bag ("F###", e.g., "F025"), and store at 4°C until SPME fiber extraction.
5. If sediment is present, store at 4°C until SPME fiber extraction.

<u>Field Protocol 5: SPME Field Retrieval Protocol (SEA Ring)</u>

1. Pull up SEA Ring and bring to surface.

2. Clip wire holding SPME envelope to tube, blot envelope dry with paper towel, wrap envelope in aluminum foil, place in labeled Ziploc bag ("F###", e.g., "F025"), and store at 4°C until SPME fiber extraction.

SOP Change in Progress Attachment (CIPA)

SOP Number	SOP Title	SOP Revision	SOP Effective Date	CIPA Effective Date
BR-WC-024	TOC in Soil	0	05/10/11	05/10/11

The following revisions were made to this standard operating procedure (SOP). These changes are effective as of the CIPA Effective Date. Changes to this document will be incorporated into the document with the next revision. This document change is authorized and issued by the laboratory's QA Department.

Section 7.2: Add the following text to this section:

- Potassium Hydrogen Phthalate (KHP) (Primary Standard Grade) Used to calibrate the instrument. 47.05% Carbon by weight

1% Carbon KHP Solution (10,000 mg Carbon/L): Add 50 mL of reagent water to a 100 mL volumetric flask. Add 2.128 g of KHP and dissolve completely. Adjust to final volume with reagent water. To mix the solution, cap the flask and invert. Allow the air bubble to reach the top of the flask. Repeat 9 times. Assign an expiration of 6 months from the date prepared and store at room temperature.

0.1% Carbon KHP Solution (1000mg Carbon/L): Add approximately 25 mL of reagent water to a 50 mL volumetric flask. Add 5 mL of 1 % Carbon KHP solution to the flask and adjust to final volume with reagent water. To mix the solution, cap the flask and invert. Allow the air bubble to reach the top of the flask. Repeat 9 times. Assign an expiration date of 6 months from the date prepared so long as the parent solution does not expire sooner, in which case use the earliest expiration date. Store the solution at room temperature.

0.01% Carbon KHP Solution (100mg Carbon/L): Add approximately 25 mL of reagent water to a 50 mL volumetric flask. Add 0.5 mL of 1% Carbon KHP Solution and adjust to final volume with reagent water. To mix the solution, cap the flask and invert. Allow the air bubble to reach the top of the flask. Repeat 9 times. Assign an expiration date of 6 months from the date prepared so long as the parent solution does not expire sooner, in which case use the earliest expiration date. Store the solution at room temperature.

Section 9.1: Change the LCS and MS acceptance criteria to 75-125%R.

QC Item	Frequency	Acceptance Criteria
Method Blank (MB)	1 in 20 or fewer samples	< RL
Laboratory Control Sample (LCS)	1 in 20 or fewer samples	%R ~~85-115~~ 75-125
Sample Duplicate (DP)	Client Request	RPD (≤ 20)
Matrix Spike (MS)	Client Request	%R ~~85-115~~ 75-125

Section 10.1: Replace the table in this section with the following table:

Calibration Standards	1.0% C KHP uL	0.1% C KHP uL	0.01%C KHP uL	% Carbon KHP	Carbon (mg)	mg/Kg of Carbon (10mg sample)
Level 1	0	0	0	47.05	0	0
Level 2	0	0	100	47.05	0.010	1000
Level 3	0	40	0	47.05	0.040	4000
Level 4	25	0	0	47.05	0.25	25000
Level 5	50	0	0	47.05	0.500	50000
Level 6	75	0	0	47.05	1.000	75000

Title: TOC in Soil

Approval Signatures:

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Approval Date: May 10, 2011

Facility Distribution No. Electronic **Distributed To: Facility Intranet**

The controlled copy of this SOP is the PDF copy of the SOP that is posted to the laboratory's SOP Directory. Printed copies of this SOP or electronic copies of this SOP distributed outside the facility are considered uncontrolled.

1.0 Scope and Application

This SOP describes the laboratory procedure for the determination of total organic carbon (TOC) and black carbon in soils, sediments and other solids.

The procedure for TOC in soils and sediments is provided in the main body of this SOP. The procedure for the determination of TOC in marine sediment high in inorganic carbon is provided in Appendix B and the procedure for black carbon is provided in Appendix D.

1.1 Analytes, Matrix(s), and Reporting Limits

This procedure may be used to determine percent dry weight in soil and solid materials.

The routine reporting limit is 1000 mg/kg based on an initial sample weight of 10 mg. Additional weight of sample may be used (up to 25 mg) to achieve as low a reporting limit as 500 mg/kg.

2.0 Summary of Method

A 10 mg aliquot of sample is transferred to a tin capsule, treated with phosphoric acid and dried in an oven at a temperature 105°C for 30 minutes to one hour in order to separate the organic carbon from inorganic carbonates and bicarbonates. The sample is analyzed on an instrument where it is pyrolyzed in an inductive type furnace. The carbon is converted to carbon dioxide and measured by a differential thermal conductivity detector.

This procedure is based on the following reference documents:

- EPA Region II Document Determination of Total Organic Carbon in Sediment, July 27, 1998, authored by Lloyd Kahn, Quality Assurance Specialist.

- Dixon, Wilfrid J., and Massey, Frank J. Jr.: Introduction to Statistical Analysis (fourth edition). Edited by Wilfrid J. Dixon. McGraw-Hill Book Company, New York, 1983. P377 and P548.

The procedure in this SOP for total organic carbon is modified from the above reference method. The procedures for black carbon and marine sediment are not based on a method and should be considered laboratory derived methods.

3.0 Definitions

A list of general laboratory terms and definitions are provided in Appendix A.

4.0 Interferences

Volatile organics in the sediments may be lost in the decarbonation step resulting in a low bias.

5.0 Safety

Employees must abide by the policies and procedures in the Corporate Environmental Health and Safety Manual (CW-E-M-001) and this document. This procedure may involve hazardous material, operations and equipment. This SOP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of the method to follow appropriate safety, waste disposal and health practices under the assumption that all samples

and reagents are potentially hazardous. Safety glasses, gloves, lab coats and closed-toe, nonabsorbent shoes are a minimum.

5.1 Specific Safety Concerns or Requirements

None

5.2 Primary Materials Used

Table 1 lists those materials used in this procedure that have a serious or significant hazard rating along with the exposure limits and primary hazards associated with that material as identified in the MSDS. The table does not include all materials used in the procedure. A complete list of materials used can be found in section 7.0. Employees must review the information in the MSDS for each material before using it for the first time or when there are major changes to the MSDS. Any questions regarding the safe handling of these materials should be directed to the laboratory's Environmental Health and Safety Coordinator.

6.0 Equipment and Supplies

- Drying Oven: Capable of maintaining a temperature of 105 ±2°C.
- Carlo Erba Elemental Analyzer Model EA1108 and Model NA 1500 or equivalent.
- Costech Elemental Analyzer: Model 4010 or equivalent.
- Analytical Balance: Capable of weighing to the nearest 0.001mg.
- Aluminum Weigh Boats.
- Tweezers
- 5mm X 9mm tin capsules
- Quartz Columns: Costech Analytical or equivalent.
- Quartz wool: for segregating and containing column materials
- Copper Wire, Reduced: Costech Analytical or equivalent.
- Tungsten on Alumina: Costech Analytical or equivalent.
- High Temperature Gloves
- Clear Plastic Sample Trays: Costech Analytical or equivalent.

7.0 Reagents and Standards

7.1 Reagents

- Reagent water

- Phosphoric Acid, Concentrated: Reagent Grade, J.T. Baker recommended.

Phosphoric Acid Solution (1:19): Add approximately 100 mL of reagent water to a 200 mL volumetric flask. Add 18.34 g of concentrated phosphoric acid to the volumetric flask then adjust to volume with reagent water. Mix the solution well then transfer the solution to a 250 mL polyethylene bottle. Assign an expiration date of six months from date made and store the solution at room temperature.

7.2 Standards

- Acetanilide Crystals of known Carbon percentage: Purchased from Costech Analytical. Used to check instrument calibration.
- Sulfanilamide Crystals (41.84% Carbon): Purchased from Costech Analytical. This material is used to calibrate the instruments.
- Laboratory Control Samples (LCS) Material, Organic Material of known Carbon percentage: Purchased from LECO Corporation.
- Matrix Spike Material, 1632B trace elements in coal (76.86% Carbon)

8.0 Sample Collection, Preservation, Shipment and Storage

The laboratory does not perform sample collection so sampling procedures are not included in this SOP. Sampling requirements may be found in the published reference method.

Listed below are the laboratory recommended minimum sample size, preservation and holding time requirements:

Parameter	Sample Container	Minimum Sample Size	Preservation	Holding Time[1]	Reference
Total Organic Carbon	Amber glass	10 g	Chilled to $\leq$ 4°C	14 Days	TOC by Lloyd Kahn
Black Carbon	Amber glass	10 g	Chilled to $\leq$ 4°C	None	None

[1] Holding time is determined from date of collection.

Unless otherwise specified by client or regulatory program, after analysis, samples and extracts are retained for a minimum of 30 days after provision of the project report and then disposed of in accordance with applicable regulations.

9.0 Quality Control

9.1 Sample QC

The laboratory prepares the following quality control samples with each batch of samples.

QC Item	Frequency	Acceptance

		Criteria
Method Blank (MB)	1 in 20 or fewer samples	< RL
Laboratory Control Sample (LCS)	1 in 20 or fewer samples	%R (85-115)
Sample Duplicate (DP)	Client Request	RPD (≤ 20)
Matrix Spikes (MS)	Client Request	%R (85-115)

9.2 Instrument QC

The laboratory analyzes the following instrument check standards:

QC Item	Frequency	Acceptance Criteria
Initial Calibration (ICAL)	Initial Method Set-Up, after combustion chamber is changed (approx. every 200 drops)	Correlation coefficient must be >0.995
Calibration Verification (Acetanilide)	Every 20 drops and at the end of the analytical sequence	%R (85-115)
Calibration Blank (CCB)	After every acetanilide	<RL

10.0 Procedure

10.1 Calibration

Analyze a calibration curve each time the combustion column is changed. Change the column after 200 drops or when you experience result issues or odd peak shapes or baseline issues. The column change procedure is provided in Appendix C.

The recommended formulations for each calibration level are provided in the following table:

Calibration Standard Sulfanimide	Weight[1] (mg)	% Carbon	Carbon (mg)
Calibration Level 1	0.100	41.84	0.0418
Calibration Level 2	0.500	41.84	0.2092
Calibration Level 3	1.00	41.84	0.4184
Calibration Level 4	1.50	41.84	0.6276
Calibration Level 5	1.75	41.84	0.7322

[1]These weights are approximate. Enter the actual weight used into the software program.

Measure a single drop for each calibration point. The instrument software system plots peak area against mg of Carbon and calculates a correlation coefficient using standard linear regression. The correlation coefficient (r) must be $\geq$ 0.995 for the calibration to be considered acceptable. If it is not, repeat the calibration prior to further analysis.

1.0 Troubleshooting

- Calibration passes at > 0.995 correlation, but LCS fails abnormally low: Re-calibrate. Calibration usually needs to be > 0.999 correlation.

- Carbon peak “maxes out” at instrument 1200mv (peak has flat top): Reanalyze sample at lower weight.

- No peaks on any chromatograms, no results: Gases to instrument may be off. Turn on all gasses at valve manifold.

- Autosampler will not work at all: Gasses to instrument may be off. Turn on all gasses at valve manifold.

- Single chromatogram shows results at bottom of page, but no peak or baseline in chromatogram window: Re-print single chromatogram.

- Some or all chromatograms show carbon peak at same retention time as Acetanilide, but peak is not identified as carbon, or is identified as another element: Retention time shifted. Adjust retention time in calibration window, and reprint chromatograms.
- Upon recalibration, peaks are not being identified as carbon: In calibration window, general tab, adjust retention time to match peaks. Starting at level 1, “Open Standard”, open level1 curve pt. in calibration directory, click “Add Peak” button, click on peak itself. Increase level #, opening standard for each curve pt and add each peak. Carbon Tab should have all five calibration points on curve, if done correctly.
- Peaks in chromatograms identified as carbon, but all results in summary table below chromatogram are zero: Current calibration not associated with run when started. Open current calibration, copy first two columns for all points (5 rows) in small table in general tab. Then, open calibration that was associated with run (should be empty) and paste into table in calibration tab. Reprint all chromatograms on run.
- Software crashes during analysis: Boot up software normally. Chromatograms already printed/analyzed are ok, but, sample that was analyzing during shutdown is lost. Restart table at next sample by un-checking “run” box for samples already run and sample that was lost.

- Autosampler error causes few samples to remain in autosampler tray after run has finished: Identify samples that got stuck. Create a new run and analyze stuck samples (with initial weights) with bracketing QC. No PBS/LCS needed.
- Autosampler error causes many sequential samples to remain in autosampler tray after run has finished (usually end of run): Add rows onto existing table. Identify samples that did not get analyzed and repeat Ids and weights into added rows. Restart table. All analyzed samples’ status should be blue (analyzed), added rows should be green (not analyzed yet).
- Various result issues or odd peak shapes or baseline issues: Column may be leaking or cracked. Change column, recalibrate.

10.3 Sample Preparation

Using tweezers, and working directly from the box, place a tin capsule on the analytical balance and tare the balance. Using the small sample scoop, add approximately 10 mg (or the project specified sample weight) of sample to the capsule. Record the actual sample weight used on sample preparation log. Remove the capsule from the balance and place into one of the aluminum holding trays. Weigh two additional portions of sample into two separate tin capsules for each field sample.

To prepare the method blank, set two empty tin capsules into an aluminum holding tray.

To prepare the LCC, weigh ~9 mg of the LECO LCS material into two separate tin capsules and set them in sequence in an aluminum holding tray.

For the matrix spike, weigh out an additional sample aliquot and record its weight. Add 0.3 – 0.7 mg of matrix spike material and record this weight.

For the sample duplicate, weigh out an additional sample aliquot. Prepare two aliquots for both the matrix spike and the sample duplicate.

Add two drops of 1:19 phosphoric acid to each tin capsule. Place the aluminum trays into a drying oven set to a temperature of 105ºC for 30-60 minutes or until all samples appear dry.

Using tweezers pinch the top of each tin capsule closed and compress the capsule around the material inside. Work carefully so as not to tear the capsule, but crush it down to the smallest size. Set the prepared samples in line in a clear plastic sample tray for storage, or place directly into an autosampler tray for analysis. For the latter, leave positions open for the acetanilide check standards and associated calibration blanks.

Prepare the acetanilide standard and blanks as follows:

For each acetanilide spike, weigh ~0.5 mg of acetanilide material into a tin capsule. Fold the capsule up and compress down to the smallest size possible. Prepare enough acetanilide to ensure a frequency of every 20 drops and the end of the analytical sequence. For each associated calibration blank, leave an empty position in the autosampler tray.

Software Set-up and Analysis

If the column has been changed generate a new calibration curve. If not, use the existing calibration curve for analysis. Each column will analyze approximately 200 individual sample drops. When the counter on the instrument approaches 200, watch the instrument data for signs that the column is deteriorating; poor peak resolution, trailing baselines, extraneous peaks. If a column change is necessary, refer to Appendix C for the procedure. After changing the column, generate a new calibration curve.

Select the appropriate channel: Channel 1 is the NA 1500, Channel 2 is the EA 1108, and Channel 3 is the Costech instrument, which has its own PC. At the main screen select the sample table icon. The last sample table that was run will be shown on the screen.

Open a new sample table, and select the appropriate number of sample positions for the analysis, then name the table with the date and a unique alpha designator (i.e. 061505a). In front of the %3r in the file name column of the sample table, add the sample table name to ensure that each individual chromatogram generated from this sample table has a unique filename associated with it.

If the combustion column has been changed and instrument needs to be calibrated, follow the procedure below:

Prepare a “bypass” drop to determine the retention time for carbon with the new column. The bypass is an aliquot of acetanilide. The weight is not needed. Drop the bypass into the

instrument and initiate a singular analysis. Set the retention time for carbon in the software to match that of the bypass drop.

Identify the first five sample lines with the names Std1 through Std 5. Enter their respective weights in the weight column, assign them a level # in the level column (Std1 is level 1, Std2 is level 2, etc.) to alert the software the order in which to place the calibration standards. In the sample type column, use the drop down and select "standard" for each. Finally, use the drop down in the Standard name column and select "sulfanilamide" for each. Add the standards to the autosampler tray and hit "start" to run the calibration.

Sample Analysis:

Open a new sample tray and create a unique file name. When the instrument was last calibrated, the software creates a calibration file with the same name as the sample table in which it was run. Open this file and save it with the same name as the sample table about to be run to ensure that the analysis is calculated from the most recent calibration. To do this, click on the calibration icon (looks like a little calibration curve) and use the file option to open the calibration file last performed. Save this file with the same name as your sample table. Click on the sample table icon (looks like a little sample table) to get back to your sample table.

Enter each sample ID and their respective weights and save the sample table. Enter a weight of 10 mg for the Method Blank (PBS) and instrument blanks.

An example analytical sequence follows:

Initial Calibration (calibration blank and 5 calibration standards)

Acetanilide	(1 drop)
Blank	(1 drop)
PBS	(2 individual drops)
LCS	(2 individual drops)
Sample	(2 individual drops)
Sample	(2 individual drops)
Sample	(2 individual drops)
Sample	(2 individual drops)
Sample	(2 individual drops)
Sample	(2 individual drops)
Sample	(2 individual drops)
Sample	(2 individual drops)
Acetanilide	(1 drop)
Blank	(1 drop)

Add the samples and acetanilides to the autosampler tray and set the tray into the autosampler carriage. Turn the autosampler tray until the number 1 position is behind the post, in front of the autosampler. The tray is now set to run.

Click the "start" icon to begin the analysis.

After analysis review the analytical results against the acceptance criteria given in Table 2, Section 18.0, and perform corrective action as necessary. Report results in mg/kg Carbon and corrected for % solids.

11.0 Calculations / Data Reduction

11.1 Calculations

11.2 Percent Carbon to mg/kg Carbon Conversion

% Carbon × 10,000 = mg/kg Carbon

11.3 LCS Percent Recovery (%R)

$$\%R = \frac{\text{LCS Result}}{\text{LCS True Value}} \times 100$$

11.4 MS Percent Recovery (%R)

$$\text{mg/Kg wet SA} = \frac{\text{Spike TV} \times \text{weight of MS added}}{\text{sample weight}} \times 1\,\text{million}$$

$$\text{mg/Kg dry SA} = \frac{\text{mg/Kg wet SA}}{\%\ \text{solid}} \times 100$$

$$\text{mg/Kg dry Carbon} = \frac{\text{mg/Kg wet Carbon (from instrument)}}{\%\ \text{solid}} \times 100$$

$$\%R = \frac{A - B}{C} \times 100$$

Where:
A= Average of two drops of MS sample result: mg/Kg dry carbon
B= Average of two drops of parent sample: mg/Kg dry carbon
C= Average of two drops of mg/Kg dry SA
SA= spike added (mg/Kg)
Spike TV= 0.7686 (mg/Kg)

11.5 Relative Percent Difference (RPD)

$$\text{RPD} = \frac{|D_1 - D_2|}{\frac{D_1 + D_2}{2}} \times 100$$

Where:

D_1 = First Sample Value

D_2 = Second Sample Value (duplicate)

11.6 Dixon Test (Use 3-7 results)

1. Sort all the results in ascending order (low values to high).
2. Calculate the tau statistic for the low and high values.
3. Compare the calculated tau statistics (low and high) to critical values listed below.
4. If either calculated tau is higher than the critical value, reject that value and repeat the test.

Tau statistic for lowest value = $\tau_L = (X_2 - X_1) / (X_k - X_1)$
Tau statistic for highest value = $\tau_H = (X_k - X_{k-1}) / (X_k - X_1)$

Where:
X_2 = Second lowest value in sorted list.
X_1 = Lowest value in sorted list.
X_k = Highest value in sorted list.
X_{k-1} = Second highest value in sorted list.

Number of observations, k	Critical Values
3	0.941
4	0.765
5	0.642
6	0.560
7	0.507

11.2 Data Review

12.0 Method Performance

13.0 Pollution Control

It is TestAmerica's policy to evaluate each method and look for opportunities to minimize waste generated (i.e., examine recycling options, ordering chemicals based on quantity needed, preparation of reagents based on anticipated usage and reagent stability). Employees must abide by the policies in Section 13 of the Corporate Safety Manual for "Waste Management and Pollution Prevention."

14.0 Waste Management

Waste management practices are conducted consistent with all applicable rules and regulations. Excess reagents, samples and method process wastes are disposed of in an accepted manner. Waste description rules and land disposal restrictions are followed. Waste disposal procedures are incorporated by reference to BR-EH-001 *Hazardous Waste*.

The following waste streams are produced when this method is carried out.

- Caustic waste – 2.5 L glass satellite container.
- Acidic Waste - 2.5L glass satellite container

The satellite containers are labeled “Hazardous Waste” along with the type of waste category generated. Authorized personnel routinely transfer the contents of the satellite containers to the hazardous waste storage room for future disposal in accordance with Federal, State and Local regulations.

15.0 References / Cross-References

- EPA Region II Document Determination of Total Organic Carbon in Sediment, July 27, 1998, authored by Lloyd Kahn, Quality Assurance Specialist.
- Dixon, Wilfrid J., and Massey, Frank J. Jr.: Introduction to Statistical Analysis (fourth edition). Edited by Wilfrid J. Dixon. McGraw-Hill Book Company, New York, 1983. P377 and P548.
- Corporate SOP CW-E-M-001 Corporate Environmental Health and Safety Manual
- Laboratory SOP BR-QA-005, Procedures for the Determination of Limits of Detection (LOD), Limits of Quantitation (LOQ) and Reporting Limits (RL).
- Laboratory SOP BR-QA-011 Employee Training
- Laboratory SOP BR-EH-011 Hazardous Waste
- Laboratory SOP BR-QA-014 Laboratory Records
- Laboratory Quality Assurance Manual (QAM)

16.0 Method Modifications

The laboratory procedure is modified from the reference method as follows:

Modification Number	Method Reference	Modification
1	TOC by Lloyd Kahn	The laboratory analyzes two drops per sample and if the RPD is greater than 40% the Dixon test is utilized.

17.0 Attachments

- Table 1: Primary Materials Used
- Table 2: QC Summary & Recommended Corrective Action
- Appendix A: Terms and Definitions
- Appendix B: TOC Procedure for High Concentration Marine Sediments (CITHON)
- Appendix C: Column change procedure
- Appendix D: Determination of Black Carbon in Sediment Procedure

18.0 Revision History

BR-WC-0024, Revision 0:

This is the first version of this SOP.

Table 1: Primary Materials Used

Material (1)	Hazards	Exposure Limit (2)	Signs and symptoms of exposure
Phosphoric Acid	Corrosive	1 Mg/M3 TWA	Inhalation is not an expected hazard unless misted or heated to high temperatures. May cause redness, pain, and severe skin burns. May cause redness, pain, blurred vision, eye burns, and permanent eye damage.
1 – Always add acid to water to prevent violent reactions.			
2 – Exposure limit refers to the OSHA regulatory exposure limit.			

Table 2: QC Summary, Frequency, Acceptance Criteria and Recommended Corrective Action

QC Item	Frequency	Acceptance Criteria	Recommended Corrective Action[1]
ICAL	Following each column change	correlation coefficient $\geq$ 0.995	Standards check, re-calibration
Acetanilide	Every 20 drops and at the end of the analytical run	%R (85-115)	Re-prepare and reanalyze samples not bracketed by passing standard.
Blank (paired with Acetanilide)	Following each Acetanilide	< RL	Re-prepare and reanalyze batch.
Method Blank (MB)	Once per batch of 20 samples	< RL DoD: ½ RL	Re-prepare and reanalyze batch.
LCS	Once per batch of 20 samples	%R (75-125)	Re-prepare and reanalyze batch.
Sample Duplicate (DP)	One per batch of 20 or less samples	RPD (≤ 20)	Discuss outlier in project narrative
MS/MSD	One per batch of 20 or less samples	%R (75-125)	Discuss outlier in project narrative
Sample precsion	Each sample is run in duplicate	%RPD<40%	Analyze 2 more replicates and perform Dixon test for high and low outliers. Include Dixon spreadsheet in the data package and narrative note results.

[1]The recommended corrective action may include some or all of the items listed in this column. The corrective action taken may be dependent on project data quality objectives and/or analyst judgment but must be sufficient to ensure that results will be valid. If corrective action is not taken or is not successful, data must be flagged with appropriate qualifiers.

Appendix A: Terms and Definitions

Batch: environmental samples, which are prepared and/or analyzed together with the same process, using the same lot(s) of reagents. A preparation/digestion batch is composed of one to 20 environmental samples of similar matrix, meeting the above criteria.

Calibration: the establishment of an analytical curve based on the absorbance, emission intensity or other measured characteristic of known standard.

Calibration Standards: a series of known standard solutions used to calibrate the instrument response with respect to analyte concentration. A standard containing the analyte in question (sulphanilimide) is prepared at varying weights and analyzed. This standard is a separate source from the LCS. The sulphanilimide is used to calibrate the instrument response with respect to analyte concentration.

Demonstration of Capability (DOC): procedure to establish the ability to generate acceptable accuracy and precision.

Holding Time: the maximum time that a sample may be held before preparation and/or analysis as promulgated by regulation or as specified in a test method.

Laboratory Control Sample (LCS): a blank matrix spiked with a known amount of analyte(s) processed simultaneously with and under the same conditions as samples through all steps of the procedure.

Matrix Duplicate (DP): duplicate aliquot of a sample processed and analyzed independently; under the same laboratory conditions; also referred to as Sample Duplicate.

Method Blank (MB): a blank matrix processed simultaneously with and under the same conditions as samples through all steps of the procedure. Also known as the preparation blank (PB).

Non-conformance: an indication, judgment, or state of not having met the requirements of the relevant specification, contract or regulation.

Preservation: refrigeration and/or reagents added at the time of sample collection to maintain the chemical, physical, and/or biological integrity of the sample.

Reporting Limit (RL): the level to which data is reported for a specific test method and/or sample.

Appendix B: Marine Sediments High in Inorganic Carbon

Sample Preparation

Transfer approximately 10 g of a thoroughly mixed sample to an aluminum weigh dish, and dry in the 105°C oven. Grind the sample with the pink mortar and pestle to a fine powder. Record the weight of a 250 mL Teflon beaker then transfer ~ 5 g of the ground sample to this beaker.

If the sample is to be spiked, weigh the beaker to the nearest 0.1mg and record the weight. Likewise determine and record the weight of the added sample. Add 0.1g of NIST 1632b Trace Elements in Coal (80.11% Carbon) to the sample. Record the weight added. Evenly distribute the spike over the sample and use a glass stir rod to mix the spike with the sample. Do not use that stir rod with any other sample.

Use Talc-free latex gloves from this point on to minimize the risk of acid burns. Add several drops of 1:1 HCL to each sample and stir each sample with its own glass stir rod. Carefully rinse the stir rod and beaker walls with DI water using a fine-tipped squirt bottle. Use only what is needed to bring the entire sample to the bottom of the beaker. ***When adding water to acid use necessary precautions to avoid splashing!*** Samples with high concentrations of inorganic carbon may effervesce to the point of overflowing the beaker, so take care to add the acid in small aliquots and stir vigorously. If the sample "boils over" it must be re-prepared. Continue to add 1:1 HCL in small aliquots until there is no further reaction, taking sample to dryness after each addition of acid in a 105-degree oven.

Dry the treated samples in the oven after each acid/water addition. Do not add more than a total of 200 mL of 1:1 HCL to any sample.

***NOTE**: Samples are hydroscopic and will absorb water if they are exposed to air for too long.*

Weigh beaker with residue and record the residue weight measurement. After the sample is thoroughly dry, scrape the sample residue from the beaker and grind to a powder using the pink mortar and pestle. Transfer the ground sample to a clean, dry 40-mL vial reserved for this analysis.

***NOTE:** Depending on the nature of the sample, it may be difficult to completely remove the dried residue from the beaker or to grind it to a homogenous powder. Where difficulties are encountered, make a note on the preparation worksheet.*

Analysis

Perform TOC analysis on processed sample material as outlined in section 10.0 of this SOP.

Appendix C: Column Change Procedure

Turn off the helium and oxygen supplies to the instrument.

Dial the left furnace temperature to a reading of 052 (this equates to 520˚C). Wait until the temperature drops below 600˚C to remove the column.

Remove the panel covering the furnace and unscrew the autosampler connection from the top of the column.

Unscrew the fitting at the bottom of the column and remove.

Lift the column up and out of the furnace using high temperature gloves.

CAUTION: The column will still be 500-600˚C. Do not touch the center portion of the column. Place the spent column in the metal can designated for this purpose.

Lay a new quartz column on the bench top, measure and mark off for the following:

- One inch up from the bottom and add a ½ inch plug of quartz wool. Note: pack the quartz wool tightly enough for it to stay in place.
- Pour in 2 ½ inches of copper wire
- Pack another ½ inch quartz wool plug on top of the copper
- Pour in 3 inches of tungsten
- Pack a final ½ inch quartz wool plug on top of the tungsten

Place the new column into the furnace and reconnect the top and bottom fittings. Snug these up, but don't over tighten.

Replace the panel covering the furnace, dial the furnace temperature back to 102 (this equates to 1020˚C), and turn the helium and oxygen supplies back on.

When the instrument comes up to operating temperature, it is ready to calibrate.

Appendix D: Determination of Black Carbon in Sediment Procedure

1. Obtain a representative subsample of the sediment. Weight 10 grams of sample into a clean pre-tared aluminum drying pan or equivalent.

2. Dry the sample at 105^{o}C for at least 12 hours.

3. Grind the sample using a mortar and pestle.

4. Sieve the sample using a number 35 sieve (500 um).

5. Treat the sample with phosphoric acid. Add acid drop wise until effervescence is no longer observed.

6. Dry the sample at 105^{o}C for 1 hour.

7. Set aside an aliquot of the sample at this stage for direct TOC analysis, reported without correction for the IN623 percent solids. Continue with the sample for Black Carbon.

8. Place the dried sample into a clean crucible and cover the sample.

9. Bake the samples at 375^{o}C in a muffle for 24 hours or until the LCS is +/- 50% of the true value.

10. Allow the samples to cool and transfer approximately 5.0 mg into each of two tin capsules.

11. Transfer the sample (in the tin capsules) to the TOC analyzer for analysis by the Lloyd Kahn Method.

12. The sample is pyrolyzed in an inductive type furnace, where the carbon is converted to carbon dioxide, which is measured using a differential thermal conductivity detector.

13. The results will be reported as mg/Kg Black Carbon.

Note: Black carbon LCS material: NIST Standard Reference Material 1944 New York-New Jersey Waterways Sediment.

References:

Orjan Gustafsson, Thomas D. Bucherli, Zofia Kukulska, Mette Andersson, Claude Largeau, Jean-Noel Rouzaud, Christopher M. Reddy and Timothy I. Eglinton (December 2001) Evaluation of a Protocol for the Quantification of Black Carbon in Sediments, Global Biogeochemical Cycles, Volume 15, pages 881-890.

Orjan Gustafsson, Farnaz Haghseta, Charmaine Chan, John MacFarlane & Philip M. Gschwend (1997) Quantification of the Dilute Sedimentary Soot Phase: Implications for PAH Speciation and Bioavailability, Environmental Science & Technology, Volume 31, pages 203-209.

APPENDIX E ESULTS FOR IN SITU BIOACCUMULATION ANALYSES

Table 1.a. Concentrations of PCBs in Tissue - Summary
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Species	Source	Basis	Lipid	PCB Detected	Total PCBs (ng/g, ww)	Tri-CBs (ng/g, ww)	Tetra-CBs (ng/g, ww)	Penta-CBs (ng/g, ww)	Hexa-CBs (ng/g, ww)
Baseline	1	Macoma	SEA Ring	B1 MN C	1.13%	Yes	145.21	4.13	46.28	80.07	14.73
Baseline	2	Macoma	SEA Ring	Average	1.11%	Yes	2.83	0.08	1.20	1.32	0.29
Baseline	3	Macoma	SEA Ring	B3 MN C	1.44%	Yes	9.31	0.08	3.09	4.71	1.43
Baseline	4	Macoma	SEA Ring	B4 MN R8	0.94%	Yes	0.44	0.08	0.08	0.18	0.25
Baseline	5	Macoma	SEA Ring	B5 MN C	1.32%	Yes	22.26	0.08	5.64	14.24	2.38
Baseline	6	Macoma	Lab	Average	1.01%	Yes	74.29	0.13	23.93	42.90	7.33
Baseline	7	Macoma	SEA Ring	Average	1.01%	Yes	4.86	0.08	1.29	2.71	0.87
Baseline	8	Macoma	SEA Ring	Average	1.26%	Yes	3.38	0.08	0.54	2.49	0.34
Baseline	9	Macoma	SEA Ring	Average	1.23%	Yes	4.36	0.08	0.88	3.00	0.48
Baseline	10	Macoma	SEA Ring	B10 MN C	1.43%	Yes	32.71	0.71	12.10	16.17	3.74
Baseline	1	Nephtys	Insufficient recovery for analysis								
Baseline	2	Nephtys	Insufficient recovery for analysis								
Baseline	3	Nephtys	SEA Ring	B3 NC C	0.88%	Yes	4.64	0.08	0.08	0.68	3.96
Baseline	4	Nephtys	SEA Ring	B4 NC R6	0.90%	Yes	6.84	0.11	1.08	3.61	2.16
Baseline	5	Nephtys	SEA Ring	B5 NC C	1.68%	Yes	35.87	0.09	8.70	24.34	2.83
Baseline	6	Nephtys	SEA Ring	B6 NC C	1.36%	Yes	39.62	0.43	11.65	24.73	2.80
Baseline	7	Nephtys	SEA Ring	B7 NC R4	1.10%	Yes	34.19	0.08	11.74	18.28	4.17
Baseline	8	Nephtys	SEA Ring	Average	0.93%	Yes	109.10	6.31	34.27	54.14	14.19
Baseline	9	Nephtys	Insufficient recovery for analysis								
Baseline	10	Nephtys	Insufficient recovery for analysis								

Table 1.a. Concentrations of PCBs in Tissue - Summary
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SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Species	Source	Basis	Lipid	PCB Detected	Total PCBs (ng/g, ww)	Tri-CBs (ng/g, ww)	Tetra-CBs (ng/g, ww)	Penta-CBs (ng/g, ww)	Hexa-CBs (ng/g, ww)
10-month	1	Macoma	SEA Ring	8 B12 MN SR1C	0.80%	Yes	0.86	0.03	0.39	0.36	0.11
10-month	2	Macoma	SEA Ring	9 B12 MN SR2C	0.50%	Yes	1.95	0.24	0.60	0.85	0.26
10-month	3	Macoma	SEA Ring	10 B12 MN SR3C	0.50%	Yes	2.83	1.69	0.08	0.50	0.64
10-month	4	Macoma	SEA Ring	12 B12 MN SR4C	0.40%	Yes	1.50	0.02	0.63	0.83	0.04
10-month	5	Macoma	SEA Ring	13 B12 MN SR5C	0.50%	Yes	2.37	0.42	0.60	1.15	0.20
10-month	6	Macoma	SEA Ring	14 B12 MN SR6C	0.40%	Yes	2.87	0.33	1.73	0.74	0.06
10-month	7	Macoma	SEA Ring	16 B12 MN SR7C	0.70%	Yes	1.63	0.11	0.48	0.89	0.15
10-month	8	Macoma	SEA Ring	17 B12 MN SR8C	1.00%	Yes	1.49	0.34	0.35	0.63	0.17
10-month	9	Macoma	SEA Ring	19 B12 MN SR9C	1.10%	Yes	0.55	0.21	0.13	0.21	0.02
10-month	10	Macoma	SEA Ring	21 B12 MN SR10C	1.10%	Yes	2.57	0.04	0.56	2.01	0.03
10-month	1	Nephtys	SEA Ring	7 B12 NC SR1C	1.20%	No	0.10	0.08	0.04	0.15	0.07
10-month	2	Nephtys	Insufficient recovery for analysis								
10-month	3	Nephtys	Insufficient recovery for analysis								
10-month	4	Nephtys	SEA Ring	11 B12 NC SR4C	0.90%	Yes	1.65	0.11	0.12	0.96	0.69
10-month	5	Nephtys	Lab	26 B12 NC L5C	0.60%	Yes	1.67	1.39	0.08	0.28	0.09
10-month	6	Nephtys	Lab	28 B12 NC L6C	0.60%	Yes	1.47	0.56	0.08	0.91	0.12
10-month	7	Nephtys	SEA Ring	15 B12 NC SR7C	1.40%	Yes	2.64	1.99	0.08	0.30	0.35
10-month	8	Nephtys	Insufficient recovery for analysis								
10-month	9	Nephtys	SEA Ring	18 B12 NC SR9C	0.80%	Yes	2.93	1.49	0.12	1.44	0.19
10-month	10	Nephtys	SEA Ring	20 B12 NC SR10C	0.50%	Yes	100.78	0.87	11.32	58.73	24.72

Table 1.a. Concentrations of PCBs in Tissue - Summary
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Species	Source	Basis	Lipid	PCB Detected	Total PCBs (ng/g, ww)	Tri-CBs (ng/g, ww)	Tetra-CBs (ng/g, ww)	Penta-CBs (ng/g, ww)	Hexa-CBs (ng/g, ww)
21-month	1	Macoma	Insufficient recovery for analysis								
21-month	2	Macoma	SEA Ring	SR B22 2 Mn	0.56%	Yes	0.22	0.04	0.06	0.05	0.11
21-month	3	Macoma	SEA Ring	SR B22 3 Mn	0.64%	Yes	2.11	0.35	0.05	0.70	0.82
21-month	4	Macoma	SEA Ring	SR B22 4 Mn	0.63%	Yes	0.50	0.05	0.05	0.12	0.32
21-month	5	Macoma	SEA Ring	SR B22 5 MN	0.78%	Yes	5.68	0.05	0.97	2.77	1.31
21-month	6	Macoma	SEA Ring	SR B22 6 Mn	0.46%	Yes	0.13	0.05	0.05	0.08	0.05
21-month	7	Macoma	SEA Ring	SR B22 7 Mn	0.85%	Yes	0.92	0.05	0.05	0.54	0.30
21-month	8	Macoma	SEA Ring	SR B22 8 Mn	0.57%	Yes	2.60	0.05	0.34	0.84	1.01
21-month	9	Macoma	SEA Ring	SR B22 9 Mn	0.69%	Yes	0.39	0.05	0.05	0.17	0.22
21-month	10	Macoma	SEA Ring	SR B22 10 Mn	0.73%	Yes	3.85	0.05	0.05	2.94	0.91
21-month	1	Nephtys	Insufficient recovery for analysis								
21-month	2	Nephtys	Insufficient recovery for analysis								
21-month	3	Nephtys	Insufficient recovery for analysis								
21-month	4	Nephtys	SEA Ring	SR B22 4 Nc	0.92%	Yes	1.23	0.18	0.18	0.61	0.44
21-month	5	Nephtys	SEA Ring	SR B22 5 Nc	0.49%	Yes	1.53	0.13	0.18	0.76	0.34
21-month	6	Nephtys	Insufficient recovery for analysis								
21-month	7	Nephtys	SEA Ring	SR B22 7 Nc	0.76%	Yes	2.29	0.05	0.25	1.32	0.67
21-month	8	Nephtys	SEA Ring	SR B22 8 Nc	0.82%	Yes	1.85	0.19	0.19	0.94	0.91
21-month	9	Nephtys	SEA Ring	SR B22 9 Nc	0.87%	Yes	2.25	0.08	0.24	1.02	0.83
21-month	10	Nephtys	SEA Ring	SR B22 10 Nc	1.10%	Yes	2.24	0.05	0.17	1.09	0.75

Table 1.a. Concentrations of PCBs in Tissue - Summary
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SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Species	Source	Basis	Lipid	PCB Detected	Total PCBs (ng/g, ww)	Tri-CBs (ng/g, ww)	Tetra-CBs (ng/g, ww)	Penta-CBs (ng/g, ww)	Hexa-CBs (ng/g, ww)
33-month	1	Macoma	SEA Ring	SR B33 1 Mn	0.79%	No	0.05	0.05	0.05	0.05	0.05
33-month	2	Macoma	SEA Ring	SR B33 2 Mn	0.29%	Yes	1.08	0.05	0.05	0.34	0.51
33-month	3	Macoma	SEA Ring	SR B33 3 Mn	0.22%	Yes	0.59	0.05	0.05	0.36	0.23
33-month	4	Macoma	SEA Ring	SR B33 4 Mn	0.25%	Yes	0.30	0.05	0.05	0.08	0.22
33-month	5	Macoma	SEA Ring	SR B33 5 Mn	0.31%	Yes	8.53	0.05	0.57	4.91	2.60
33-month	6	Macoma	SEA Ring	B33-6A-MN	0.50%	No	0.05	0.05	0.05	0.05	0.05
33-month	7	Macoma	Insufficient recovery for analysis								
33-month	8	Macoma	SEA Ring	B33-8-MN	0.59%	Yes	0.17	0.05	0.05	0.04	0.14
33-month	9	Macoma	SEA Ring	SR B33 9 Mn	0.42%	Yes	0.12	0.05	0.05	0.05	0.12
33-month	10	Macoma	SEA Ring	SR B33 10 Mn	0.34%	Yes	1.89	0.05	0.28	0.79	0.64
33-month	1	Nephtys	SEA Ring	SR B33 1 Nc Average	1.33%	Yes	1.78	0.06	0.06	0.56	1.07
33-month	2	Nephtys	Insufficient recovery for analysis								
33-month	3	Nephtys	Insufficient recovery for analysis								
33-month	4	Nephtys	SEA Ring	SR B33 4 Nc	1.17%	Yes	1.30	0.09	0.09	0.67	0.55
33-month	5	Nephtys	SEA Ring	SR B33 5 Nc	1.56%	Yes	3.20	0.06	0.09	0.89	1.82
33-month	6	Nephtys	SEA Ring	SR B33 6A Nc	1.23%	Yes	1.36	0.04	0.04	0.44	0.78
33-month	7	Nephtys	Insufficient recovery for analysis								
33-month	8	Nephtys	SEA Ring	SR B33 8A Nc	1.14%	Yes	0.50	0.07	0.07	0.28	0.22
33-month	9	Nephtys	SEA Ring	SR B33 9 Nc	1.80%	No	0.10	0.10	0.10	0.10	0.10
33-month	10	Nephtys	Insufficient recovery for analysis								

Table 1.a. Concentrations of PCBs in Tissue - Summary
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Species	Total PCBs (ng/g, lw)	Tri-CBs (ng/g, lw)	Tetra-CBs (ng/g, lw)	Penta-CBs (ng/g, lw)	Hexa-CBs (ng/g, lw)
Baseline	1	Macoma	12,850.80	365.31	4,095.75	7,086.11	1,303.63
Baseline	2	Macoma	254.57	7.42	108.54	118.83	26.53
Baseline	3	Macoma	646.81	5.72	214.72	326.81	99.38
Baseline	4	Macoma	46.28	8.76	8.04	19.47	26.81
Baseline	5	Macoma	1,685.98	6.24	426.97	1,078.41	180.61
Baseline	6	Macoma	7,355.15	13.01	2,369.17	4,247.58	725.39
Baseline	7	Macoma	481.42	8.15	127.46	268.09	85.87
Baseline	8	Macoma	268.61	6.54	42.64	197.26	27.28
Baseline	9	Macoma	354.72	6.70	71.46	244.23	39.02
Baseline	10	Macoma	2,287.62	49.30	845.94	1,130.77	261.61
Baseline	1	Nephtys	Insufficient recovery for analysis				
Baseline	2	Nephtys	Insufficient recovery for analysis				
Baseline	3	Nephtys	527.16	9.36	8.59	76.93	450.23
Baseline	4	Nephtys	760.33	12.61	119.56	400.89	239.89
Baseline	5	Nephtys	2,135.18	5.34	517.98	1,449.05	168.15
Baseline	6	Nephtys	2,912.87	31.76	856.69	1,818.60	205.81
Baseline	7	Nephtys	3,108.00	7.49	1,067.45	1,661.73	378.82
Baseline	8	Nephtys	11,731.59	678.25	3,684.70	5,821.75	1,526.10
Baseline	9	Nephtys	Insufficient recovery for analysis				
Baseline	10	Nephtys	Insufficient recovery for analysis				

Table 1.a. Concentrations of PCBs in Tissue - Summary
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Species	Total PCBs (ng/g, lw)	Tri-CBs (ng/g, lw)	Tetra-CBs (ng/g, lw)	Penta-CBs (ng/g, lw)	Hexa-CBs (ng/g, lw)
10-month	1	Macoma	107.50	3.61	48.75	45.00	13.75
10-month	2	Macoma	390.00	48.00	120.00	170.00	52.00
10-month	3	Macoma	566.00	338.00	15.11	100.00	128.00
10-month	4	Macoma	375.00	4.83	157.50	207.50	10.00
10-month	5	Macoma	474.20	84.20	119.80	230.40	39.80
10-month	6	Macoma	716.50	83.00	432.50	186.00	15.00
10-month	7	Macoma	232.43	15.43	68.71	127.14	21.14
10-month	8	Macoma	149.20	34.40	34.80	62.60	17.40
10-month	9	Macoma	50.18	19.18	11.73	19.27	1.41
10-month	10	Macoma	233.18	3.61	50.45	182.73	2.90
10-month	1	Nephtys	8.62	6.86	3.58	12.32	5.46
10-month	2	Nephtys	Insufficient recovery for analysis				
10-month	3	Nephtys	Insufficient recovery for analysis				
10-month	4	Nephtys	183.33	12.61	13.13	106.67	76.67
10-month	5	Nephtys	278.83	232.00	12.59	46.83	14.89
10-month	6	Nephtys	245.00	93.33	12.59	151.67	19.57
10-month	7	Nephtys	188.64	142.07	5.40	21.29	25.29
10-month	8	Nephtys	Insufficient recovery for analysis				
10-month	9	Nephtys	366.00	186.63	14.77	179.38	23.73
10-month	10	Nephtys	20,156.80	174.00	2,264.00	11,746.00	4,943.60

Table 1.a. Concentrations of PCBs in Tissue - Summary
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Species	Total PCBs (ng/g, lw)	Tri-CBs (ng/g, lw)	Tetra-CBs (ng/g, lw)	Penta-CBs (ng/g, lw)	Hexa-CBs (ng/g, lw)
21-month	1	Macoma	Insufficient recovery for analysis				
21-month	2	Macoma	39.82	7.59	11.43	8.93	19.46
21-month	3	Macoma	328.91	55.00	7.81	108.59	128.59
21-month	4	Macoma	78.73	7.54	7.54	18.89	51.43
21-month	5	Macoma	727.56	6.41	124.10	355.64	167.95
21-month	6	Macoma	27.17	10.33	10.33	16.74	10.43
21-month	7	Macoma	108.12	5.29	5.41	63.41	35.18
21-month	8	Macoma	456.67	8.33	59.65	147.37	177.54
21-month	9	Macoma	56.23	7.25	7.25	24.64	31.59
21-month	10	Macoma	527.12	6.51	6.51	402.19	124.93
21-month	1	Nephtys	Insufficient recovery for analysis				
21-month	2	Nephtys	Insufficient recovery for analysis				
21-month	3	Nephtys	Insufficient recovery for analysis				
21-month	4	Nephtys	134.13	19.84	19.84	65.98	47.28
21-month	5	Nephtys	311.84	26.02	36.12	155.31	69.39
21-month	6	Nephtys	Insufficient recovery for analysis				
21-month	7	Nephtys	301.32	6.25	32.89	173.16	87.50
21-month	8	Nephtys	225.37	23.17	23.17	114.02	111.34
21-month	9	Nephtys	258.51	8.91	27.93	117.01	95.75
21-month	10	Nephtys	203.36	4.55	15.09	99.18	67.73

Table 1.a. Concentrations of PCBs in Tissue - Summary
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Species	Total PCBs (ng/g, lw)	Tri-CBs (ng/g, lw)	Tetra-CBs (ng/g, lw)	Penta-CBs (ng/g, lw)	Hexa-CBs (ng/g, lw)
33-month	1	Macoma	6.29	6.29	6.29	6.29	6.29
33-month	2	Macoma	373.10	16.55	16.55	117.59	174.83
33-month	3	Macoma	265.77	22.25	22.25	162.16	103.60
33-month	4	Macoma	121.95	19.19	19.19	32.52	89.43
33-month	5	Macoma	2,769.48	15.00	184.42	1,594.16	844.48
33-month	6	Macoma	8.97	8.97	8.97	8.97	8.97
33-month	7	Macoma	Insufficient recovery for analysis				
33-month	8	Macoma	29.12	8.15	8.15	5.89	23.23
33-month	9	Macoma	29.02	11.61	11.61	11.61	29.02
33-month	10	Macoma	563.10	14.11	83.33	236.01	190.77
33-month	1	Nephtys	134.49	4.48	4.48	41.89	80.94
33-month	2	Nephtys	Insufficient recovery for analysis				
33-month	3	Nephtys	Insufficient recovery for analysis				
33-month	4	Nephtys	110.77	7.37	7.37	57.52	47.01
33-month	5	Nephtys	205.19	3.87	5.64	57.24	116.47
33-month	6	Nephtys	110.81	3.11	3.11	35.85	63.66
33-month	7	Nephtys	Insufficient recovery for analysis				
33-month	8	Nephtys	44.21	6.21	6.21	24.82	19.39
33-month	9	Nephtys	5.72	5.72	5.72	5.72	5.72
33-month	10	Nephtys	Insufficient recovery for analysis				

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g | cannot be resolved due to co-elutions on both columns

SAMPLE ID	Lab ID	Report Limit	Detect Limit	SURROGATES %Rec TMX	%Rec 209	Mono 1	Mono 3	Di 5	Di 6	Di 7	Di 8	Di 9	Di 12	Di 13	Di 14	Di 15	Tri 16	Tri 17	Tri 18
B5 NC CL	35	0.6	0.20	52.5	95.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 NC C	90	1	0.33	60.6	75.7	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN C	9	0.91	0.30	55.7	65.6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC CL	40	0.89	0.30	61.7	89.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN CL	64	0.9	0.30	58.7	69.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN C	83	0.93	0.31	69.6	82.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN CLAB	54	0.91	0.30	66.7	76.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R1	28	1	0.33	81.8		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					94.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC R5	24	0.76	0.25	58		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					70.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R3	30	0.87	0.29	64.5		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					77.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 8	42	0.8	0.27	76.5		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					87.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 9	43	0.54	0.18	91.5		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					112.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 13	44	0.6	0.20	68		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					87	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 5	41	0.62	0.21	60		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					80.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 1	45	0.56	0.19	90.5		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					80	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R10	14	0.86	0.29	64.5	66	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R9	15	0.19	0.06	59		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					63.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN R2	26	0.18	0.06	48.6		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					54	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8NC R3	22	0.91	0.30	48.25		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					61.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R1	25	0.88	0.29	63		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					67.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Report Limit	Detect Limit	%Rec TMX	%Rec 209	Mono 1	Mono 3	Di 5	Di 6	Di 7	Di 8	Di 9	Di 12	Di 13	Di 14	Di 15	Tri 16	Tri 17	Tri 18
B8 NC R4	23	0.96	0.32	73.4	123.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**6.701**
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
B6 NC 10	46	0.57	0.19	63.6	110.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**2.933**
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
B4 NC R6	87	1.56	0.52	78.2	81.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R2	26	0.18	0.06	48.6	77.8	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R3	27	0.17	0.06	57.5	104.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R2	29	0.2	0.07	50.3	76.8	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 23	50	0.18	0.06	66.5	103.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 24	51	0.19	0.06	68.1	100.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 38	53	0.97	0.32	80.6	102.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 22	60	0.87	0.29	30.5	70.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 36	61	0.94	0.31	53.6	96.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 39	62	0.93	0.31	50.6	104.6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 34	63	0.87	0.29	55.8	103.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R1	75	0.2	0.07	55.5	103.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R3	76	0.2	0.07	64.8	90.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R7	77	0.18	0.06	74.0	83.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN R8	82	0.9	0.30	47.4	86.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 NC C	86	0.91	0.30	44.1	60.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC C	19	0.51	0.17	32.0	59.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B1 MN C	1	0.86	0.29	59.7	64.8	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B10 MN C	4	0.87	0.29	64.4	96.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Report Limit	Detect Limit	%Rec TMX	%Rec 209	Mono 1	Mono 3	Di 5	Di 6	Di 7	Di 8	Di 9	Di 12	Di 13	Di 14	Di 15	Tri 16	Tri 17	Tri 18
B8 MN C	12	0.94	0.31	42.4	47.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN C	16	0.92	0.31	79.0	121.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC C	21	0.96	0.32	52.2	91.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN CL	59	0.19	0.06	63.4	51.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC MN C	68	0.19	0.06	68.1	86.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN C	74	0.19	0.06	70.9	106.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 MN C	78	0.19	0.06	74.0	100.6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN CL	49	0.18	0.06	67.5	92.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC NC C	33	0.33	0.11	34.5	66.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC CL	91	0.97	0.32	61.4	89.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC CL	48	0.79	0.26	64.3	72.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**5.644**
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
B7 NC R4	20	0.8	0.27	56.0	92.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 4	38	0.74	0.25	45.4	107.6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 20	39	0.69	0.23	49.3	104.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R6	11	0.84	0.28	52.6	77.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R3	10	0.91	0.30	67.3	81.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 40	65	0.86	0.29	66.5	86.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 25	66	0.89	0.30	57.6	70.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 35	67	0.88	0.29	53.6	68.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 14	47	0.94	0.31	53.0	61.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.812**	N.D.	N.D.	N.D.	**0.819**	**1.862**
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Report Limit	Detect Limit	%Rec TMX	%Rec 209	Mono 1	Mono 3	Di 5	Di 6	Di 7	Di 8	Di 9	Di 12	Di 13	Di 14	Di 15	Tri 16	Tri 17	Tri 18
B4 MN 30	52	0.19	0.06	59.9	46.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R6	13	0.19	0.06	41.0	36.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BLK	1		62.4	72.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec			76.7	80.6			74.3											63.3
	BSD %Rec			54.1	79.9			58.5											51.9
	BLK	1		61.0	69.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
						N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec			58.3	100.6			61.8											65.8
	BSD %Rec			65.4	64.0			76.0											62.0
B2 MN R3	76MS %Rec			83.8	53.4			70.1											85.0
B6 MN CL	59MS %Rec			82.774	57.102			86.5											106.8

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

		Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tetra	Tetra	Tetra	Tetra	Tetra
SAMPLE ID	**Lab ID**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28/31**	**29**	**32**	**33**	**34**	**35**	**37**	**40**	**41**	**42**	**44**	**45**
B5 NC CL	35	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 NC C	90	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN C	9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC CL	40	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN CL	64	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN C	83	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN CLAB	54	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.62**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R1	28	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC R5	24	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R3	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 8	42	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 9	43	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 13	44	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 5	41	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 1	45	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R10	14	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R9	15	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8NC R3	22	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R1	25	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tri 19	Tri 20	Tri 22	Tri 24	Tri 25	Tri 26	Tri 27	Tri 28/31	Tri 29	Tri 32	Tri 33	Tri 34	Tri 35	Tri 37	Tetra 40	Tetra 41	Tetra 42	Tetra 44	Tetra 45
B8 NC R4	23	**5.01**		N.D.	N.D.	N.D.	N.D.	N.D.	**8.508**	N.D.	**3.245**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			1.767	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 10	46	N.D.		N.D.	N.D.	**1.021**	N.D.	N.D.	**4.329**	N.D.	**1.11**		N.D.	N.D.	N.D.	**0.824**	N.D.	N.D.	N.D.	N.D.
		N.D.	**1.026**	N.D.	N.D.		N.D.	N.D.		N.D.		**1.876**	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B4 NC R6	87	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R3	27	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R2	29	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 23	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 24	51	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 38	53	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 22	60	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.269**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B6 MN 36	61	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.71**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B6 MN 39	62	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.248**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B6 MN 34	63	N.D.	N.D.	N.D.	N.D.	**0.657**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.441**	N.D.
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B2 MN R1	75	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R3	76	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R7	77	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN R8	82	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 NC C	86	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC C	19	N.D.	N.D.	N.D.	N.D.	N.D.	**0.432**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B1 MN C	1	N.D.		N.D.	N.D.	**0.782**	N.D.	N.D.	**2.102**	N.D.	**0.719**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.486**	N.D.
		N.D.	**0.525**	N.D.	N.D.		N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B10 MN C	4	N.D.	N.D.	N.D.	N.D.	**0.705**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tri 19	Tri 20	Tri 22	Tri 24	Tri 25	Tri 26	Tri 27	Tri 28/31	Tri 29	Tri 32	Tri 33	Tri 34	Tri 35	Tri 37	Tetra 40	Tetra 41	Tetra 42	Tetra 44	Tetra 45
B8 MN C	12	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN C	16	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC C	21	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.933**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B6 MN CL	59	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC MN C	68	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN C	74	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 MN C	78	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN CL	49	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC NC C	33	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC CL	91	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC CL	48	N.D.		N.D.	N.D.	**1.945**	**7.322**	N.D.	**6.723**	N.D.	**2.817**		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.			N.D.		N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC R4	20	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.43**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B7 NC 4	38	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 20	39	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R6	11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R3	10	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 40	65	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 25	66	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 35	67	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 14	47	N.D.		N.D.	N.D.	**3.913**	**5.624**	**0.8**	**2.56**	N.D.	**0.874**		N.D.	N.D.	N.D.	N.D.	N.D.	**2.289**	**9.475**	N.D.
		N.D.	**1.024**	N.D.	N.D.					N.D.		**1.557**	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tri 19	Tri 20	Tri 22	Tri 24	Tri 25	Tri 26	Tri 27	Tri 28/31	Tri 29	Tri 32	Tri 33	Tri 34	Tri 35	Tri 37	Tetra 40	Tetra 41	Tetra 42	Tetra 44	Tetra 45
B4 MN 30	52	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R6	13	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec								83.6										77.8	
	BSD %Rec								72.1										74.0	
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec								95.3										87.7	
	BSD %Rec								96.5										79.0	
B2 MN R3	76MS %Rec								90.2										96.3	
B6 MN CL	59MS %Rec								88.3										84.6	

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

SAMPLE ID	**Lab ID**	**Tetra 46**	**Tetra 47**	**Tetra 48**	**Tetra 49**	**Tetra 51**	**Tetra 52**	**Tetra 53**	**Tetra 54**	**Tetra 56**	**Tetra 59**	**Tetra 60**	**Tetra 63**	**Tetra 64**	**Tetra 66**	**Tetra 67**	**Tetra 69**	**Tetra 70**	**Tetra 71**	**Tetra 73**
B5 NC CL	35	N.D.	N.D.	N.D.	N.D.	N.D.	**4.50**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**3.82**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.17**	N.D.	N.D.		N.D.	N.D.
B5 NC C	90	N.D.	N.D.	N.D.	N.D.	N.D.	**4.21**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**2.99**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.50**	N.D.	N.D.		N.D.	N.D.
B7 MN C	9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.63**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
B7 NC CL	40	N.D.	N.D.	N.D.	N.D.	N.D.	**4.34**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**2.26**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.73**	N.D.	N.D.		N.D.	N.D.
B7 MN CL	64	N.D.	N.D.	N.D.	N.D.	N.D.	**2.14**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.60**	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN C	83	N.D.	N.D.	N.D.	N.D.	N.D.	**2.69**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**2.23**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.72**	N.D.	N.D.		N.D.	N.D.
B5 MN CLAB	54	N.D.	N.D.	N.D.	N.D.	N.D.	**5.15**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.67**		N.D.	N.D.	**4.82**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		**1.22**	N.D.	N.D.		N.D.	N.D.
B0 NC R1	28	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC R5	24	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.89**	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R3	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 8	42	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.09**	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 9	43	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.52**	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 13	44	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.71**	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 5	41	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.43**	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 1	45	N.D.	N.D.	N.D.	N.D.	N.D.	**0.77**	N.D.	N.D.	**1.31**	N.D.	N.D.	N.D.	N.D.		**2.41**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**9.43**		N.D.	N.D.	N.D.	N.D.
B8 MN R10	14	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.80**	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R9	15	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.09**	N.D.	N.D.
B9 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8NC R3	22	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.98**	N.D.	N.D.
B0 MN R1	25	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.49**	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tetra 46	Tetra 47	Tetra 48	Tetra 49	Tetra 51	Tetra 52	Tetra 53	Tetra 54	Tetra 56	Tetra 59	Tetra 60	Tetra 63	Tetra 64	Tetra 66	Tetra 67	Tetra 69	Tetra 70	Tetra 71	Tetra 73
B8 NC R4	23	N.D.			N.D.	N.D.	**51.412**		N.D.	N.D.	N.D.	N.D.	N.D.	**4.295**		N.D.	N.D.	**28.9**	**8.39**	N.D.
		N.D.	**6.584**	**3.318**	N.D.	N.D.		**8.156**	N.D.	N.D.	N.D.	N.D.	N.D.		**16.408**	N.D.	N.D.			N.D.
B6 NC 10	46	N.D.			N.D.	**1.17**	**42.113**		N.D.	N.D.	N.D.	N.D.	N.D.	**4.352**		N.D.	N.D.	**24.386**	**6.066**	N.D.
		N.D.	**4.245**	**2.304**	N.D.			**4.107**	N.D.	N.D.	N.D.	N.D.	N.D.		**9.189**	N.D.	N.D.			N.D.
B4 NC R6	87	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.076**	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	**0.139**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R3	27	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R2	29	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 23	50	N.D.	N.D.	N.D.	N.D.	N.D.	0.12	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 24	51	N.D.	N.D.	N.D.	N.D.	N.D.	**0.082**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.077**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
B4 MN 38	53	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**3.074**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**3.37**	N.D.	N.D.		N.D.	N.D.
B6 MN 22	60	N.D.			N.D.	N.D.	**8.713**	**1.237**	N.D.	N.D.	N.D.	N.D.	N.D.	**1.05**		N.D.	N.D.	**6.507**	N.D.	N.D.
		N.D.	**0.954**	**1.001**	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.		**1.722**	N.D.	N.D.		N.D.	N.D.
B6 MN 36	61	N.D.	N.D.	N.D.	N.D.	N.D.	**14.119**	**2.448**	N.D.	N.D.	N.D.	N.D.	N.D.	**1.411**		N.D.	N.D.	**8.851**	**2.713**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.		**2.474**	N.D.	N.D.			N.D.
B6 MN 39	62	N.D.			N.D.	N.D.	**12.131**	**2.015**	N.D.	N.D.	N.D.	N.D.	N.D.	**1.239**		N.D.	N.D.	**7.832**	**1.953**	N.D.
		N.D.	**1.182**	**0.896**	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.		**2.268**	N.D.	N.D.			N.D.
B6 MN 34	63	N.D.			N.D.	N.D.	**11.706**	**1.87**	N.D.	N.D.	N.D.	N.D.	N.D.	**1.537**		N.D.	N.D.	**8.31**	**2.267**	N.D.
		N.D.	**1.675**	**0.98**	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.		**2.914**	N.D.	N.D.			N.D.
B2 MN R1	75	N.D.	N.D.	N.D.	N.D.	N.D.	**0.363**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.914**	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R3	76	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R7	77	N.D.	N.D.	N.D.	**0.074**	N.D.	**0.233**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN R8	82	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 NC C	86	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC C	19	N.D.	N.D.	**0.566**	N.D.	N.D.	**5.373**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**2.571**	**0.477**	N.D.
		N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.423**	N.D.	N.D.			N.D.
B1 MN C	1	N.D.			N.D.	N.D.	**17.306**	**3.418**	N.D.	N.D.	N.D.	N.D.	N.D.	**2.095**		N.D.	N.D.	**10.702**	**3.39**	N.D.
		N.D.	**2.213**	**1.334**	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.		**4.338**	N.D.	N.D.			N.D.
B10 MN C	4	N.D.	N.D.	N.D.	N.D.	N.D.	**6.839**	**0.901**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**3.812**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.545**	N.D.	N.D.		N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tetra 46	Tetra 47	Tetra 48	Tetra 49	Tetra 51	Tetra 52	Tetra 53	Tetra 54	Tetra 56	Tetra 59	Tetra 60	Tetra 63	Tetra 64	Tetra 66	Tetra 67	Tetra 69	Tetra 70	Tetra 71	Tetra 73
B8 MN C	12	N.D.	N.D.	N.D.	N.D.	N.D.	**0.607**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.448**	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN C	16	N.D.	N.D.	N.D.	N.D.	N.D.	**0.901**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.857**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
B8 NC C	21	N.D.	N.D.	N.D.	N.D.	N.D.	**2.134**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**3.294**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.492**	N.D.	N.D.		N.D.	N.D.
B6 MN CL	59	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC MN C	68	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN C	74	N.D.	N.D.	N.D.	**0.106**	N.D.	**0.559**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**1.35**	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.22**	N.D.	N.D.		N.D.	N.D.
B3 MN C	78	N.D.	N.D.	N.D.	N.D.	N.D.	**0.97**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**1.68**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.442**	N.D.	N.D.		N.D.	N.D.
B4 MN CL	49	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.15**	N.D.	N.D.	N.D.	N.D.	N.D.
BC NC C	33	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC CL	91	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC CL	48	N.D.			N.D.	**2.348**	**53.868**	**9.822**	N.D.		N.D.		N.D.	**4.688**		N.D.	N.D.	**22.411**	**9.503**	N.D.
		N.D.	**6.932**	**3.353**	N.D.				N.D.	**2.359**	N.D.	**0.602**	N.D.		**12.456**	N.D.	N.D.			N.D.
B7 NC R4	20	N.D.	N.D.	N.D.	N.D.	N.D.	**3.962**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**3.655**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**2.695**	N.D.	N.D.		N.D.	N.D.
B7 NC 4	38	N.D.	N.D.	N.D.	N.D.	N.D.	**3.978**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.055**	**3.233**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.
B7 NC 20	39	N.D.	N.D.	**0.536**	N.D.	N.D.	**4.601**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**3.464**	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
B7 MN R6	11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.635**	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R3	10	N.D.	N.D.	N.D.	N.D.	N.D.	**1.299**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.302**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
B7 MN 40	65	N.D.	N.D.	N.D.	N.D.	N.D.	**4.307**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**3.217**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.135**	N.D.	N.D.		N.D.	N.D.
B7 MN 25	66	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**0.871**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.452**	N.D.	N.D.		N.D.	N.D.
B7 MN 35	67	N.D.	N.D.	N.D.	N.D.	N.D.	**0.749**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**0.826**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.522**	N.D.	N.D.		N.D.	N.D.
B6 NC 14	47	N.D.			N.D.	**0.837**	**25.374**	**4.145**	N.D.	**1.785**	N.D.	N.D.	N.D.	**2.811**		N.D.	N.D.	**10.725**	**3.493**	N.D.
		N.D.	**2.865**	**2.434**	N.D.				N.D.		N.D.	N.D.	N.D.		**6.284**	N.D.	N.D.			N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tetra 46	Tetra 47	Tetra 48	Tetra 49	Tetra 51	Tetra 52	Tetra 53	Tetra 54	Tetra 56	Tetra 59	Tetra 60	Tetra 63	Tetra 64	Tetra 66	Tetra 67	Tetra 69	Tetra 70	Tetra 71	Tetra 73
B4 MN 30	52	N.D.	N.D.	N.D.	**0.052**	N.D.	**0.154**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R6	13	N.D.	N.D.	N.D.	N.D.	N.D.	**0.203**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec						75.9								89.9					
	BSD %Rec						66.9								87.1					
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec						80.4								83.0					
	BSD %Rec						79.0								93.5					
B2 MN R3	76MS %Rec						88.6								91.7					
B6 MN CL	59MS %Rec						111.9								104.7					

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

SAMPLE ID	Lab ID	Tetra 74	Tetra 75	Tetra 77	Tetra 81/87	Penta 82	Penta 83	Penta 84	Penta 85	Penta 90/101	Penta 91	Penta 92	Penta 93	Penta 95	Penta 97	Penta 99	Penta 100	Penta 103	Penta 104	Penta 105
B5 NC CL	35	N.D.	N.D.	N.D.	**3.86**	**0.39**	N.D.		**0.63**		**1.21**		N.D.		**1.59**	**2.29**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.			N.D.	**1.03**		**3.35**		**0.51**	N.D.	**2.50**			N.D.	N.D.	N.D.	**0.51**
B5 NC C	90	N.D.	N.D.	N.D.	**3.25**	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.		**0.65**	**1.61**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	**1.82**	N.D.	**3.11**	N.D.	N.D.	N.D.	**3.15**			N.D.	N.D.	N.D.	N.D.
B7 MN C	9	N.D.	N.D.	N.D.	**0.64**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.95**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC CL	40	N.D.	N.D.	N.D.	**3.10**	N.D.	N.D.		N.D.		**0.68**	N.D.	N.D.		**1.20**	N.D.	N.D.	N.D.	**0.80**	
		N.D.	N.D.	N.D.		N.D.	N.D.	**0.81**	N.D.	**3.07**		N.D.	N.D.	**2.16**		N.D.	N.D.	N.D.		**0.37**
B7 MN CL	64	N.D.	N.D.	N.D.	**1.71**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		**0.68**	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**2.01**	N.D.	N.D.	N.D.	**1.02**		N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN C	83	N.D.	N.D.	N.D.	**2.49**	N.D.	N.D.		N.D.		**0.60**	N.D.	N.D.		**1.02**	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	**0.64**	N.D.	**2.48**		N.D.	N.D.	**1.34**		N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN CLAB	54	N.D.	N.D.	N.D.	**7.36**	**0.88**	N.D.		**1.43**		**1.68**		N.D.		**2.92**	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.			N.D.	**1.22**		**5.91**		**0.81**	N.D.	**3.32**		N.D.	N.D.	N.D.	N.D.	**1.27**
B0 NC R1	28	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC R5	24	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.50**	N.D.	N.D.	N.D.	**0.76**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R3	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.16**	N.D.	N.D.	N.D.	N.D.	N.D.	**0.15**
B4 NC 8	42	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 9	43	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.62**	N.D.	N.D.	N.D.	**0.55**	N.D.	N.D.	N.D.	N.D.	N.D.	**0.19**
B4 NC 13	44	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.62**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 5	41	N.D.	N.D.	N.D.	**0.38**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.35**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 1	45	N.D.	N.D.	N.D.	**6.16**	**0.70**	N.D.		N.D.		**0.70**		**0.29**		**1.69**	**3.10**	**2.06**	N.D.	N.D.	
		N.D.	N.D.	N.D.			N.D.	**5.36**	N.D.	**3.91**		**0.58**		**2.78**				N.D.	N.D.	**1.73**
B8 MN R10	14	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.72**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R9	15	N.D.	N.D.	N.D.	**0.05**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		**0.06**	**0.07**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.31**	N.D.	N.D.	N.D.	**0.11**			N.D.	N.D.	N.D.	**0.03**
B9 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8NC R3	22	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.96**	N.D.	N.D.	N.D.	**0.81**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R1	25	N.D.	N.D.	N.D.	**1.56**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.92**	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.86**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**1.00**

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tetra 74	Tetra 75	Tetra 77	Tetra 81/87	Penta 82	Penta 83	Penta 84	Penta 85	Penta 90/101	Penta 91	Penta 92	Penta 93	Penta 95	Penta 97	Penta 99	Penta 100	Penta 103	Penta 104	Penta 105
B8 NC R4	23	N.D.		N.D.	**18.91**	**3.039**	**1.679**		N.D.		**7.042**		**1.349**		**10.412**	**19.481**	N.D.	N.D.	N.D.	
		N.D.	**0.882**	N.D.				**13.113**	N.D.	**28.427**		**3.706**		**29.056**			N.D.	N.D.	N.D.	**3.35**
B6 NC 10	46	N.D.		N.D.	**24.442**	**2.932**	**1.811**		**4.058**		**6.894**		N.D.		**12.128**	**17.821**	N.D.	N.D.	N.D.	
		N.D.	**0.762**	N.D.				**12.002**		**27.031**		**4.127**	N.D.	**28.036**			N.D.	N.D.	N.D.	**3.349**
B4 NC R6	87	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	**0.967**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.22**	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	**0.501**
B0 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R3	27	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R2	29	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.344**	N.D.	N.D.	N.D.	**0.042**	N.D.	N.D.	N.D.	N.D.	N.D.	**0.011**
B4 MN 23	50	N.D.	N.D.	N.D.	**0.074**	N.D.	N.D.	N.D.	0.034		N.D.	N.D.	N.D.		N.D.	**0.113**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		**0.454**	N.D.	N.D.	N.D.	**0.136**	N.D.		N.D.	N.D.	N.D.	**0.042**
B4 MN 24	51	N.D.	N.D.	N.D.	**0.041**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	**0.059**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.358**	N.D.	N.D.	N.D.	**0.071**	N.D.		N.D.	N.D.	N.D.	N.D.
B4 MN 38	53	N.D.	N.D.	N.D.	**12.212**	**1.571**	**0.685**		**2.013**		**0.604**		N.D.		**3.513**	**4.835**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.				**1.641**		**6.265**		**0.9**	N.D.	**2.221**			N.D.	N.D.	N.D.	**4.596**
B6 MN 22	60	N.D.	N.D.	N.D.	**4.042**	N.D.	N.D.		**0.822**	N.D.	**1.246**		N.D.		**2.083**	**3.5**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	**1.847**		N.D.		**0.623**	N.D.	**4.317**			N.D.	N.D.	N.D.	**0.668**
B6 MN 36	61	N.D.	N.D.	N.D.	**10.232**	**1.33**	**0.641**		**1.71**	N.D.	**2.165**		N.D.		**4.335**	**6.098**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.				**3.082**		N.D.		**1.395**	N.D.	**7.413**			N.D.	N.D.	N.D.	**1.637**
B6 MN 39	62	N.D.	N.D.	N.D.	**7.854**	N.D.	**0.53**		**1.379**	N.D.	**1.91**		N.D.		**3.568**	**5.769**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.		**2.335**		N.D.		**1.187**	N.D.	**6.286**			N.D.	N.D.	N.D.	**1.402**
B6 MN 34	63	N.D.	N.D.	N.D.	**8.373**	N.D.	**0.502**		**1.387**	N.D.	**2.332**		N.D.		**3.927**	**6.632**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.		**1.875**		N.D.		**1.122**	N.D.	**7.248**			N.D.	N.D.	N.D.	**1.308**
B2 MN R1	75	N.D.	N.D.	N.D.	**0.099**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		**0.074**	**0.116**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.324**	N.D.	N.D.	N.D.	**0.169**			N.D.	N.D.	N.D.	**0.04**
B2 MN R3	76	N.D.	N.D.	N.D.	**0.062**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		**0.065**	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.283**	N.D.	N.D.	N.D.	**0.153**		N.D.	N.D.	N.D.	N.D.	**0.056**
B2 MN R7	77	N.D.	N.D.	N.D.	**0.087**	N.D.	N.D.	N.D.	**0.035**		N.D.	N.D.	N.D.		**0.092**	**0.094**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		**0.236**	N.D.	N.D.	N.D.	**0.191**			N.D.	N.D.	N.D.	**0.04**
B4 MN R8	82	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 NC C	86	N.D.	N.D.	N.D.	**0.677**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC C	19	N.D.		N.D.	**3.103**	N.D.	N.D.		**0.468**	N.D.	**0.564**		N.D.		**1.288**	**2.066**	N.D.	N.D.	**2.505**	
		N.D.	**1.241**	N.D.		N.D.	N.D.	**1.324**		N.D.		**0.478**	N.D.	**3.309**			N.D.	N.D.		**0.392**
B1 MN C	1	N.D.	N.D.	N.D.	**11.141**	N.D.	**0.723**		**1.964**	N.D.	**2.903**		N.D.		**5.05**	**7.884**	N.D.	N.D.	**1.038**	
		N.D.	N.D.	N.D.		N.D.		**3.478**		N.D.		**1.594**	N.D.	**10.1**			N.D.	N.D.		**1.814**
B10 MN C	4	N.D.	N.D.	N.D.	**1.981**	N.D.	N.D.		N.D.	N.D.	**0.735**		N.D.		**1.131**	**1.461**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	**0.99**	N.D.	N.D.		**0.676**	N.D.	**2.487**			N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tetra 74	Tetra 75	Tetra 77	Tetra 81/87	Penta 82	Penta 83	Penta 84	Penta 85	Penta 90/101	Penta 91	Penta 92	Penta 93	Penta 95	Penta 97	Penta 99	Penta 100	Penta 103	Penta 104	Penta 105
B8 MN C	12	N.D.	N.D.	N.D.	**0.33**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**1.236**	N.D.	N.D.	N.D.	**0.758**	N.D.	N.D.	N.D.	N.D.	N.D.	**0.114**
B9 MN C	16	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	**0.763**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.857**	N.D.		N.D.	N.D.	N.D.	N.D.
B8 NC C	21	N.D.	N.D.	N.D.	**2.212**	N.D.	N.D.	N.D.	N.D.	N.D.	**0.566**	N.D.	N.D.		**0.89**	**1.462**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**1.683**			N.D.	N.D.	N.D.	**0.449**
B6 MN CL	59	N.D.	N.D.	N.D.	**0.037**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.114**	N.D.	N.D.	N.D.	**0.093**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC MN C	68	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN C	74	N.D.	N.D.	N.D.	**0.102**	N.D.	N.D.		**0.048**		**0.05**		N.D.		**0.097**	**0.121**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	**0.101**		**0.378**		**0.116**	N.D.	**0.222**			N.D.	N.D.	N.D.	**0.058**
B3 MN C	78	N.D.	N.D.	N.D.	**0.355**	**0.055**	N.D.	N.D.	**0.145**		**0.129**	N.D.	N.D.		**0.279**	**0.439**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.			N.D.	N.D.		**0.782**		N.D.	N.D.	**0.771**			N.D.	N.D.	N.D.	**0.122**
B4 MN CL	49	N.D.	N.D.	N.D.	**0.167**	N.D.	N.D.	N.D.	**0.093**		N.D.	N.D.	N.D.		**0.173**	**0.23**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		**0.594**	N.D.	N.D.	N.D.	**0.338**			N.D.	N.D.	N.D.	**0.065**
BC NC C	33	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	**0.202**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.706**	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B4 NC CL	91	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC CL	48	N.D.		N.D.	**21.482**	**2.644**	**2.025**		**3.85**	N.D.	**6.393**		N.D.		**12.017**	**19.297**	N.D.	N.D.	N.D.	
		N.D.	**1.278**	N.D.				**12.492**		N.D.		**4.336**	N.D.	**30.384**			N.D.	N.D.	N.D.	**2.87**
B7 NC R4	20	N.D.	N.D.	N.D.	**4.028**	N.D.	N.D.		N.D.	N.D.	**0.619**	N.D.	N.D.		**1.219**	**1.899**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	**1.028**	N.D.	N.D.		N.D.	N.D.	**2.031**			N.D.	N.D.	N.D.	N.D.
B7 NC 4	38	N.D.		N.D.	**2.802**	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.132**	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	**0.686**	N.D.		N.D.	N.D.	**0.843**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 20	39	N.D.	N.D.	N.D.	**3.368**	N.D.	N.D.		N.D.	N.D.	**0.77**	N.D.	N.D.	N.D.	**1.461**	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	**0.926**	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R6	11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R3	10	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.199**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 40	65	N.D.	N.D.	N.D.	**3.663**	**0.403**	N.D.		**0.63**	N.D.	**0.836**	N.D.	N.D.		**1.599**	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.			N.D.	**0.74**		N.D.		N.D.	N.D.	**2.165**		N.D.	N.D.	N.D.	N.D.	**0.478**
B7 MN 25	66	N.D.	N.D.	N.D.	**0.82**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 35	67	N.D.	N.D.	N.D.	**0.64**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.357**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 14	47	N.D.		N.D.	**7.136**	**1.613**	**1.203**		**2.338**		**3.675**		N.D.		**7.097**	**9.676**	N.D.	N.D.	**2.113**	
		N.D.	**0.545**	N.D.				**6.719**		**20.689**		**3.673**	N.D.	**19.805**			N.D.	N.D.		**2.485**

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Tetra 74	Tetra 75	Tetra 77	Tetra 81/87	Penta 82	Penta 83	Penta 84	Penta 85	Penta 90/101	Penta 91	Penta 92	Penta 93	Penta 95	Penta 97	Penta 99	Penta 100	Penta 103	Penta 104	Penta 105
B4 MN 30	52	N.D.	N.D.	N.D.	**0.064**	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.		**0.062**	**0.104**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	**0.096**	N.D.	**0.379**	N.D.	N.D.	N.D.	**0.143**			N.D.	N.D.	N.D.	N.D.
B8 MN R6	13	N.D.	N.D.	N.D.	**0.383**	N.D.	N.D.	N.D.	**0.041**		**0.037**	N.D.	N.D.		**0.068**	**0.12**	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		**0.306**		N.D.	N.D.	**0.175**			N.D.	N.D.	N.D.	**0.044**
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec																			
	BSD %Rec																			
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec																			
	BSD %Rec				73.5					98.0										
B2 MN R3	76MS %Rec				96.0					84.2										
B6 MN CL	59MS %Rec				104.1					97.1										

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

SAMPLE ID	Lab ID	Penta 107	Penta 110	Penta 114	Penta 115	Penta 117	Penta 118	Penta 119	Penta 122	Penta 123	Penta 124	Hexa 128	Hexa 129	Hexa 130	Hexa 131	Hexa 132	Hexa 134	Hexa 135	Hexa 136	Hexa 137
B5 NC CL	35		**4.99**	N.D.	N.D.	N.D.	**3.16**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		1.00		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B5 NC C	90		**3.95**	N.D.	N.D.	N.D.	**2.35**	**1.09**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		3.38		N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 MN C	9		N.D.	N.D.	N.D.	N.D.	**0.78**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		0.72	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 NC CL	40	N.D.	**4.19**	N.D.	N.D.	N.D.	**2.31**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 MN CL	64		**2.67**	N.D.	N.D.	N.D.	**1.55**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		0.80		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B5 MN C	83	N.D.	**3.63**	N.D.	N.D.	N.D.	**2.03**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B5 MN CLAB	54	N.D.	**9.88**	N.D.	N.D.	N.D.	**6.60**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B0 NC R1	28	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC R5	24	**0.73**	N.D.	N.D.	N.D.	N.D.	**0.51**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R3	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 8	42	N.D.	N.D.	N.D.	N.D.	N.D.	**0.87**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.64**	N.D.	N.D.	N.D.	N.D.
B4 NC 9	43	**0.82**	N.D.	N.D.	N.D.	N.D.	**0.58**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.60**	N.D.	N.D.	N.D.	N.D.
B4 NC 13	44	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	**0.39**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.37**	N.D.	N.D.	N.D.	N.D.
B4 NC 5	41	**0.70**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 1	45		**5.87**	N.D.	N.D.	N.D.	**4.27**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R10	14	**1.03**	N.D.	N.D.	N.D.	N.D.	**0.48**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R9	15	N.D.	**0.16**	N.D.	N.D.	N.D.	N.D.	**0.12**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8NC R3	22	N.D.	**1.77**	N.D.	N.D.	N.D.	**0.93**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R1	25	N.D.	**3.64**	N.D.	N.D.	N.D.	**3.78**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Penta 107	Penta 110	Penta 114	Penta 115	Penta 117	Penta 118	Penta 119	Penta 122	Penta 123	Penta 124	Hexa 128	Hexa 129	Hexa 130	Hexa 131	Hexa 132	Hexa 134	Hexa 135	Hexa 136	Hexa 137
B8 NC R4	23		**34.984**	N.D.	N.D.	N.D.	**20.317**	**1.693**	N.D.	N.D.	N.D.	N.D.	**5.761**	N.D.	**4.004**		N.D.	N.D.	**2.805**	N.D.
				N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.		N.D.			N.D.	N.D.		N.D.
B6 NC 10	46		**39.379**	N.D.	N.D.	N.D.	**21.639**	**1.388**	N.D.	N.D.	N.D.	N.D.	**0.593**	**0.646**	**0.63**		N.D.		**2.701**	N.D.
				N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.					N.D.	**1.366**		N.D.
B4 NC R6	87	N.D.	N.D.	N.D.	N.D.	N.D.	**0.92**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R3	27	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R2	29	N.D.	N.D.	N.D.	N.D.	N.D.	**0.021**	N.D.	N.D.	N.D.	N.D.	**0.014**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 23	50	N.D.	**0.262**	N.D.	N.D.	N.D.	**0.163**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 24	51	N.D.	**0.118**	N.D.	N.D.	N.D.	**0.09**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 38	53		**14.939**	N.D.	N.D.	N.D.	**17.089**	N.D.	N.D.	N.D.	N.D.	N.D.	**5.427**	N.D.	**1.25**		N.D.	N.D.	**1.629**	**1.088**
				N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.			N.D.	N.D.		
B6 MN 22	60		**8.816**	N.D.	N.D.	N.D.	**4.596**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		0.446		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B6 MN 36	61		**15.981**	N.D.	N.D.	N.D.	**9.369**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**0.95**	N.D.
		0.836		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.
B6 MN 39	62		**13.152**	N.D.	N.D.	N.D.	**7.945**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**0.759**	N.D.
		0.76		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.
B6 MN 34	63		**15.894**	N.D.	N.D.	N.D.	**9.035**	**0.514**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	**0.831**	N.D.
		0.731		N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.
B2 MN R1	75	N.D.	**0.301**	N.D.	N.D.	N.D.	**0.157**	N.D.	N.D.	N.D.	N.D.	**0.028**	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B2 MN R3	76	N.D.	**0.19**	N.D.	N.D.	N.D.	**0.109**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B2 MN R7	77	N.D.	**0.283**	N.D.	N.D.	N.D.	**0.146**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B4 MN R8	82	N.D.	N.D.	N.D.	N.D.	N.D.	**0.183**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 NC C	86		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**3.962**	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC C	19		**5.666**	N.D.	N.D.	N.D.	**2.273**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		1.297		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B1 MN C	1		**20.799**	N.D.	N.D.	N.D.	**11.057**	**0.528**	N.D.	N.D.	N.D.	**1.224**	N.D.	N.D.	**1.299**		N.D.	N.D.	**1.14**	N.D.
				N.D.	N.D.	N.D.			N.D.	N.D.	N.D.		N.D.	N.D.			N.D.	N.D.		N.D.
B10 MN C	4		**3.902**	N.D.	N.D.	N.D.	**2.363**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		0.444		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Penta 107	Penta 110	Penta 114	Penta 115	Penta 117	Penta 118	Penta 119	Penta 122	Penta 123	Penta 124	Hexa 128	Hexa 129	Hexa 130	Hexa 131	Hexa 132	Hexa 134	Hexa 135	Hexa 136	Hexa 137
B8 MN C	12		**1.563**	N.D.	N.D.	N.D.	**0.656**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		0.498		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.742	N.D.	N.D.	N.D.	N.D.
B9 MN C	16	N.D.	**3.261**	N.D.	N.D.	N.D.	**1.127**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B8 NC C	21	N.D.	**3.662**	N.D.	N.D.	N.D.	**1.885**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.727**		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.
B6 MN CL	59	N.D.	N.D.	N.D.	N.D.	N.D.	**0.072**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
BC MN C	68	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN C	74	N.D.	**0.378**	N.D.	N.D.	N.D.	**0.203**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B3 MN C	78	N.D.	**1.03**	N.D.	N.D.	N.D.	**0.599**	N.D.	N.D.	N.D.	N.D.	**0.073**	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B4 MN CL	49	N.D.	**0.686**	N.D.	N.D.	N.D.	**0.583**	N.D.	N.D.	N.D.	N.D.	**0.096**	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
BC NC C	33	N.D.	N.D.	N.D.	N.D.	N.D.	**0.177**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B4 NC CL	91	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC CL	48		**42.234**	N.D.	N.D.	N.D.	**21.801**	**1.372**	N.D.	N.D.	N.D.	**1.951**	N.D.	N.D.	N.D.		N.D.	N.D.	**2.481**	N.D.
		2.397		N.D.	N.D.	N.D.			N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.
B7 NC R4	20		**4.379**	N.D.	N.D.	N.D.	**3.076**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
				N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 NC 4	38		**4.15**	N.D.	N.D.	N.D.	**2.526**	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
				N.D.	N.D.	N.D.		N.D.	N.D.	**1.524**	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 NC 20	39	N.D.	**4.618**	N.D.	**1.474**	N.D.	**2.61**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	**0.54**	N.D.	N.D.
		N.D.		N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.
B7 MN R6	11	**1.093**	N.D.	N.D.	N.D.	N.D.	**0.715**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 MN R3	10		N.D.	N.D.	N.D.	N.D.	**1.13**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 MN 40	65		**5.749**	N.D.	N.D.	N.D.	**3.363**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
				N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 MN 25	66	N.D.	**1.253**	N.D.	N.D.	N.D.	**0.751**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
B7 MN 35	67	**1.25**	N.D.	N.D.	N.D.	N.D.	**0.593**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.231**		N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.
B6 NC 14	47		**18.825**	N.D.	N.D.	N.D.	**11.227**	**0.867**	N.D.	N.D.	N.D.	**1.159**	N.D.	**0.461**	**0.228**		**0.502**		**1.993**	N.D.
				N.D.	N.D.	N.D.			N.D.	N.D.	N.D.		N.D.					**0.93**		N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Penta 107	Penta 110	Penta 114	Penta 115	Penta 117	Penta 118	Penta 119	Penta 122	Penta 123	Penta 124	Hexa 128	Hexa 129	Hexa 130	Hexa 131	Hexa 132	Hexa 134	Hexa 135	Hexa 136	Hexa 137
B4 MN 30	52	N.D.	**0.273**	N.D.	N.D.	N.D.	**0.142**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R6	13	N.D.	**0.301**	N.D.	N.D.	N.D.	**0.173**	N.D.	N.D.	N.D.	N.D.	**0.023**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec																			
	BSD %Rec																			
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec																			
	BSD %Rec		66.5																	
B2 MN R3	76MS %Rec		88.8																	
B6 MN CL	59MS %Rec		123.6																	

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

SAMPLE ID	Lab ID	Hexa 138	Hexa 141	Hexa 144	Hexa 146	Hexa 147	Hexa 149	Hexa 151	Hexa 153	Hexa 154	Hexa 156	Hexa 157	Hexa 158	Hexa 163/164	Hexa 165	Hexa 167	Hepta 170	Hepta 171	Hepta 172	Hepta 173
B5 NC CL	35	**2.17**	**0.36**	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**0.55**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.	N.D.	N.D.	**0.91**	N.D.	**1.07**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 NC C	90	**0.93**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**1.17**	N.D.	**0.73**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN C	9	**0.58**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.62**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC CL	40	**1.43**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.84**	N.D.	**0.70**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN CL	64	**0.98**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.80**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN C	83	**1.43**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.96**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN CLAB	54	**4.87**	N.D.	N.D.	**0.47**	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.		N.D.	**1.82**	N.D.	**1.60**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R1	28	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC R5	24	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R3	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.08**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 8	42	**0.74**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.55**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 9	43	**0.62**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.57**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.39**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 13	44	**0.43**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 5	41	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 1	45	**3.85**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**1.51**	N.D.	**3.77**	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**4.95**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.
B8 MN R10	14	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R9	15	**0.10**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**0.04**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.07**	N.D.	**0.08**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8NC R3	22	**0.71**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R1	25	**2.87**	**0.69**	N.D.	**0.46**	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.		N.D.	**1.11**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Hexa 138	Hexa 141	Hexa 144	Hexa 146	Hexa 147	Hexa 149	Hexa 151	Hexa 153	Hexa 154	Hexa 156	Hexa 157	Hexa 158	Hexa 163/164	Hexa 165	Hexa 167	Hepta 170	Hepta 171	Hepta 172	Hepta 173
B8 NC R4	23	**9.071**			N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**3.13**	N.D.	N.D.	N.D.	**0.773**	N.D.	N.D.
			1.861	**0.526**	N.D.	N.D.	**16.898**	N.D.	**8.51**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.
B6 NC 10	46	**8.967**	**1.109**		**1.229**	N.D.		**1.757**		N.D.	N.D.	N.D.	N.D.	**2.59**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				0.431		N.D.	**5.414**		**4.904**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC R6	87	**0.99**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.576**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.593**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R3	27	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R2	29	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.063**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 23	50	**0.144**	N.D.	N.D.	N.D.	N.D.		**0.036**		N.D.	N.D.	N.D.	N.D.	**0.053**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.119**		**0.118**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 24	51	**0.087**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.073**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 38	53	**17.461**	**3.339**	N.D.	**2.12**	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**4.342**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.		N.D.	**5.688**	N.D.	**8.452**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 22	60	**1.919**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**1.076**	N.D.	**0.92**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 36	61	**4.718**	N.D.	N.D.	**0.555**	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.		N.D.	**2.258**	N.D.	**2.025**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 39	62	**3.712**	N.D.	N.D.	N.D.	N.D.		**0.545**		N.D.	N.D.	N.D.	N.D.	**1.056**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**1.868**		**1.782**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 34	63	**4.134**	**0.558**	N.D.	**0.49**	N.D.		**0.622**		N.D.	N.D.	N.D.	N.D.	**1.343**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.		N.D.	**2.316**		**2.082**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R1	75	**0.125**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**0.04**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.096**	N.D.	**0.089**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R3	76	**0.09**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.026**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R7	77	**0.118**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.039**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.091**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN R8	82	**0.172**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.08**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 NC C	86	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC C	19	**1.177**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**0.309**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.637**	N.D.	**0.676**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B1 MN C	1	**4.715**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**1.239**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**2.806**	N.D.	**2.308**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B10 MN C	4	**1.567**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**0.442**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.946**	N.D.	**0.786**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Hexa 138	Hexa 141	Hexa 144	Hexa 146	Hexa 147	Hexa 149	Hexa 151	Hexa 153	Hexa 154	Hexa 156	Hexa 157	Hexa 158	Hexa 163/164	Hexa 165	Hexa 167	Hepta 170	Hepta 171	Hepta 172	Hepta 173
B8 MN C	12	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN C	16	**0.453**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.507**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC C	21	**1.532**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.484**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.755**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN CL	59	**0.063**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.02**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.03**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC MN C	68	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN C	74	**0.135**	N.D.	N.D.	N.D.	N.D.		**0.035**		N.D.	N.D.	N.D.	N.D.	**0.046**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.106**		**0.114**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 MN C	78	**0.377**	**0.059**	N.D.	**0.067**	N.D.		**0.074**		N.D.	N.D.	N.D.	N.D.	**0.108**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.		N.D.	**0.347**		**0.326**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN CL	49	**0.398**	**0.039**	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**0.153**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.	N.D.	N.D.	**0.381**	N.D.	**0.452**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC NC C	33	**0.154**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	**0.147**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.101**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC CL	91	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC CL	48	**8.758**	**1.153**	N.D.	**1.33**	N.D.		N.D.		N.D.	N.D.	N.D.	**0.95**	**2.19**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.		N.D.	**6.06**	N.D.	**5.952**	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC R4	20	**1.958**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**1.01**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**1.199**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 4	38	**1.791**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.446**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**1.131**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 20	39	**1.554**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.405**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**1.206**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R6	11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R3	10	**0.676**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.731**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 40	65	**1.915**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**0.421**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**1.083**	N.D.	**0.785**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 25	66	**0.534**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 35	67	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 14	47	**4.915**	**0.623**		**0.861**	N.D.		**1.176**		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				0.378		N.D.	**5.197**		**4.854**	N.D.	N.D.	N.D.	**0.622**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Hexa 138	Hexa 141	Hexa 144	Hexa 146	Hexa 147	Hexa 149	Hexa 151	Hexa 153	Hexa 154	Hexa 156	Hexa 157	Hexa 158	Hexa 163/164	Hexa 165	Hexa 167	Hepta 170	Hepta 171	Hepta 172	Hepta 173
B4 MN 30	52	**0.137**	N.D.	N.D.	N.D.	N.D.		**0.027**		N.D.	N.D.	N.D.	N.D.	**0.049**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.073**		**0.124**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R6	13	**0.121**	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	**0.028**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.	N.D.	N.D.	**0.093**	N.D.	**0.084**	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec	70.9	64.5					68.1	97.7								84.6			
	BSD %Rec	68.0	62.6					62.5	95.2								77.5			
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec	65.7	77.0					58.3	69.1								77.6			
	BSD %Rec	65.5	67.0					96.0	67.5								67.0			
B2 MN R3	76MS %Rec	81.9	78.9					83.9	82.0								59.0			
B6 MN CL	59MS %Rec	87.7	67.8					70.6	92.0								67.2			

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

		Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Octa	Octa	Octa	Octa	Octa
SAMPLE ID	**Lab ID**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**185**	**187**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**
B5 NC CL	35	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 NC C	90	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN C	9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC CL	40	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN CL	64	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN C	83	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN CLAB	54	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R1	28	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC R5	24	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R3	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.147**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 8	42	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 9	43	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 13	44	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 5	41	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 1	45	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R10	14	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R9	15	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.038**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8NC R3	22	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R1	25	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Hepta 174	Hepta 175	Hepta 176	Hepta 177	Hepta 178	Hepta 179	Hepta 180	Hepta 183	Hepta 185	Hepta 187	Hepta 189	Hepta 190	Hepta 191	Hepta 193	Octa 194	Octa 195	Octa 196	Octa 197	Octa 199
B8 NC R4	23	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 10	46	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.504**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC R6	87	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R3	27	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R2	29	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.038**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 23	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 24	51	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 38	53	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 22	60	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 36	61	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 39	62	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 34	63	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R1	75	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.03**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R3	76	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R7	77	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN R8	82	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 NC C	86	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC C	19	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B1 MN C	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B10 MN C	4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Hepta 174	Hepta 175	Hepta 176	Hepta 177	Hepta 178	Hepta 179	Hepta 180	Hepta 183	Hepta 185	Hepta 187	Hepta 189	Hepta 190	Hepta 191	Hepta 193	Octa 194	Octa 195	Octa 196	Octa 197	Octa 199
B8 MN C	12	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN C	16	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC C	21	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN CL	59	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC MN C	68	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN C	74	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 MN C	78	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.085**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN CL	49	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.157**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC NC C	33	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.127**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC CL	91	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC CL	48	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.847**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC R4	20	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 4	38	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 20	39	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R6	11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R3	10	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 40	65	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 25	66	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 35	67	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 14	47	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.455**	N.D.	N.D.	**0.493**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Hepta 174	Hepta 175	Hepta 176	Hepta 177	Hepta 178	Hepta 179	Hepta 180	Hepta 183	Hepta 185	Hepta 187	Hepta 189	Hepta 190	Hepta 191	Hepta 193	Octa 194	Octa 195	Octa 196	Octa 197	Octa 199
B4 MN 30	52	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R6	13	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.034**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec							59.5	61.9		60.3									
	BSD %Rec							59.4	59.3		57.0									
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec							69.3	69.5		70.7									
	BSD %Rec							67.5	102.0		95.5									
B2 MN R3	76MS %Rec							66.7	74.4		73.4									
B6 MN CL	59MS %Rec							71.7	85.8		75.1									

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

SAMPLE ID	Lab ID	Octa 200	Octa 201	Octa 202	Octa 203	Octa 205	Nona 206	Nona 207	Nona 208
B5 NC CL	35	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 NC C	90	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN C	9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC CL	40	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN CL	64	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN C	83	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5 MN CLAB	54	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R1	28	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC R5	24	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R3	30	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 8	42	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 9	43	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 13	44	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC 5	41	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 1	45	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R10	14	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R9	15	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8NC R3	22	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R1	25	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Octa 200	Octa 201	Octa 202	Octa 203	Octa 205	Nona 206	Nona 207	Nona 208
B8 NC R4	23	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 10	46	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC R6	87	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R2	26	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 MN R3	27	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B0 NC R2	29	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 23	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 24	51	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN 38	53	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 22	60	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 36	61	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 39	62	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN 34	63	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R1	75	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R3	76	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN R7	77	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN R8	82	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 NC C	86	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC C	19	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B1 MN C	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B10 MN C	4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Octa 200	Octa 201	Octa 202	Octa 203	Octa 205	Nona 206	Nona 207	Nona 208
B8 MN C	12	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MN C	16	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 NC C	21	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MN CL	59	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC MN C	68	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2 MN C	74	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3 MN C	78	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MN CL	49	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BC NC C	33	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 NC CL	91	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC CL	48	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC R4	20	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 4	38	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 NC 20	39	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R6	11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN R3	10	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 40	65	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 25	66	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7 MN 35	67	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 NC 14	47	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.b. Concentrations of PCB Congeners in Tissue - Baseline Characterization
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

SAMPLE ID	Lab ID	Octa 200	Octa 201	Octa 202	Octa 203	Octa 205	Nona 206	Nona 207	Nona 208
B4 MN 30	52	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B8 MN R6	13	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec						61.3		
	BSD %Rec						59.0		
	BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	BS %Rec						58.5		
	BSD %Rec						61.5		
B2 MN R3	76MS %Rec						47.1		
B6 MN CL	59MS %Rec						48.8		

Nephtys caecoides	
Station #	**% lipids**
BC-Nc-C	1.21
B0-Nc-R1	1.27
B0-Nc-R2	1.18
B3-Nc-C	0.88
B4-Nc-R6	1.22
B4-Nc-CL	0.90
B5-Nc-CL	1.58
B5-Nc-C	1.68
B6-Nc-CL	1.38
B6-Nc-C	1.36
B7-Nc-R4	1.1
B7-Nc-CL	1.15
B8-Nc-C	0.93

Macoma nasuta	
Station #	**% lipids**
BC-Mn-C	1.18
B0-Mn-R1	1.04
B0-Mn-R2	0.84
B1-Mn-C	1.13
B2-Mn-C	1.11
B3-Mn-C	1.44
B4-Mn-R8	1.13
B4-Mn-CL	0.96
B5-Mn-C	1.32
B5-Mn-CLab	1.25
B6-Mn-CL	1.01
B7-Mn-CL	1.19
B7-Mn-C	1.01
B8-Mn-C	1.26
B9-Mn-C	1.23
B10-Mn-C	1.43

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g			%rec	%rec	Lipid														
Red font indicates >MDL, <RL						Mono	Mono	Di	Di	Di	Di	Di	Di	Di	Di	Di	Di	Di	Tri
Sample ID	**RL**	**MDL**	**TMX**	**209**	**(% ww)**	**1**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**13**	**14**	**15**	**16**
1 B12 NC TO1	0.96	**0.32**	65.0	68.5	0.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 B12 NC TO2	0.9	**0.30**	44.0	53.5	0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 B12 NC TO3	0.92	**0.31**	66.0	71.5	0.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4 B12 MN TO1	0.98	**0.33**	61.0	82.0	0.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5 B12 MN TO2	0.69	**0.23**	68.0	57.0	0.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6 B12BMN TO3	0.73	**0.24**	62.0	54.5	0.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7 B12 NC SR1C	0.99	**0.33**	46.9	57.5	1.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	0.81	**0.27**	51.0	69.5	0.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	0.17	**0.06**	48.2	71.0	0.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	0.81	**0.27**	53.5	72.5	0.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	0.16	**0.05**	61.5	77.0	0.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10 B12 MN SR3C	0.8	**0.27**	53.5	66.0	0.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11 B12 NC SR4C	1.5	**0.50**	58.0	56.0	0.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	0.83	**0.28**	53.0	73.0	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	0.16	**0.05**	65.5	76.0	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 B12 MN SR5C	0.16	**0.05**	45.8	65.0	0.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	0.82	**0.27**	50.5	66.0	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	0.16	**0.05**	43.5	67.0	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
15 B12 NC SR7C	0.95	**0.32**	68.5	69.0	1.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	0.78	**0.26**	56.0	81.5	0.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	0.16	**0.05**	44.9	66.5	0.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	0.83	**0.28**	54.5	73.0	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	0.17	**0.06**	58.0	70.5	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18 B12 NC SR9C	0.99	**0.33**	66.5	55.5	0.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 B12 MN SR9C	0.16	**0.05**	51.0	68.5	1.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 B12 NC SR10C	0.9	**0.30**	45.9	60.0	0.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	0.8	**0.27**	52.5	77.0	1.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	0.16	**0.05**	59.0	60.0	1.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22 B12 NC CONTROL C	0.64	**0.21**	58.5	52.0	0.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	0.77	**0.26**	52.0	79.0	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	0.15	**0.05**	59.5	67.0	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24 B12 NC L4C	0.78	**0.26**	46.1	62.0	0.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	0.79	**0.26**	51.5	77.0	1.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	0.16	**0.05**	67.5	70.0	1.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26 B12 NC L5C	0.77	**0.26**	68.5	76.0	0.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	0.8	**0.27**	51.5	75.0	1.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	0.16	**0.05**	60.0	52.5	1.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28 B12 NC L6C	0.89	**0.30**	54.0	60.0	0.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	0.77	**0.26**	54.5	78.5	1.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	0.16	**0.05**	50.5	68.5	1.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL, <RL Sample ID	RL	MDL	%rec TMX	%rec 209	Lipid (% ww)	Mono 1	Mono 3	Di 4	Di 5	Di 6	Di 7	Di 8	Di 9	Di 10	Di 12	Di 13	Di 14	Di 15	Tri 16
30 B12 NC L7C	0.95	**0.32**	49.3	54.5	0.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	0.82	**0.27**	54.0	84.5	1.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	0.16	**0.05**	56.0	74.0	1.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

Red font indicates >MDL	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tetra	Tetra
Sample ID	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28/31**	**29**	**31**	**32**	**33**	**34**	**35**	**37**	**40**	**41**
1 B12 NC TO1	ND	ND	ND	0.507	ND	ND	ND	ND	ND	0.904	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 B12 NC TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 B12 NC TO3	ND	ND	ND	0.726	ND	ND	ND	ND	ND	**2.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND
4 B12 MN TO1	ND	ND	ND	0.402	ND	ND	ND	ND	ND	**1.59**	ND	ND	ND	ND	ND	ND	ND	ND	ND
5 B12 MN TO2	ND	ND	ND	0.32	ND	ND	ND	ND	ND	**1.61**	ND	ND	ND	ND	ND	ND	ND	ND	ND
6 B12BMN TO3	ND	ND	ND	0.298	ND	ND	ND	ND	ND	**1.61**	ND	ND	ND	ND	ND	ND	ND	ND	ND
7 B12 NC SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.24**	ND	ND	ND	ND	ND	ND	ND	ND	ND
10 B12 MN SR3C	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.34**	ND	ND	ND	0.35	ND	ND	ND	ND	ND
11 B12 NC SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 B12 MN SR5C	ND	ND	ND	0.088	ND	ND	ND	ND	ND	**0.245**	ND	ND	ND	0.088	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	0.1	ND	ND	ND	ND	ND	**0.232**	ND	ND	ND	ND	ND	ND	ND	ND	ND
15 B12 NC SR7C	ND	ND	ND	0.409	ND	ND	ND	ND	ND	1.58	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	0.108	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	ND	ND	0.099	ND	ND	ND	ND	ND	**0.245**	ND	ND	ND	ND	ND	ND	ND	ND	ND
18 B12 NC SR9C	ND	ND	ND	0.463	ND	ND	ND	ND	ND	**1.03**	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 B12 MN SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.211**	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 B12 NC SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.87	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22 B12 NC CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	0.127	ND	ND	ND	ND	ND	**0.507**	ND	ND	ND	ND	ND	ND	ND	ND	ND
24 B12 NC L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.307**	ND	ND	ND	ND	ND	ND	ND	ND	ND
26 B12 NC L5C	ND	ND	ND	0.422	ND	ND	ND	**0.97**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	0.071	ND	ND	ND	ND	ND	**0.328**	ND	ND	ND	ND	ND	ND	ND	ND	ND
28 B12 NC L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.56	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	0.153	ND	ND	ND	ND	ND	**0.386**	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL Sample ID	Tri 17	Tri 18	Tri 19	Tri 20	Tri 22	Tri 24	Tri 25	Tri 26	Tri 27	Tri 28/31	Tri 29	Tri 31	Tri 32	Tri 33	Tri 34	Tri 35	Tri 37	Tetra 40	Tetra 41
30 B12 NC L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.737	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	0.088	ND	ND	ND	ND	ND	**0.256**	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL Sample ID	Tetra 42	Tetra 44	Tetra 45	Tetra 46	Tetra 47	Tetra 48	Tetra 49	Tetra 51	Tetra 52	Tetra 53	Tetra 54	Tetra 56	Tetra 59	Tetra 60	Tetra 63	Tetra 64	Tetra 66	Tetra 67	Tetra 69
1 B12 NC TO1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 B12 NC TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 B12 NC TO3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.771	ND	ND
4 B12 MN TO1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5 B12 MN TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.335	ND	ND
6 B12BMN TO3	0.484	0.256	ND	ND	ND	ND	ND	ND	0.407	ND	ND	ND	ND	ND	ND	ND	0.172	ND	ND
7 B12 NC SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	0.05	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND	ND	ND	ND	0.13	ND	ND
10 B12 MN SR3C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11 B12 NC SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	ND	ND	ND	ND	ND	ND	0.14	ND	ND
13 B12 MN SR5C	ND	ND	ND	ND	ND	ND	ND	ND	0.112	ND	ND	ND	ND	ND	ND	ND	0.156	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	0.101	ND	ND	ND	ND	ND	ND	ND	**1.35**	ND	ND
15 B12 NC SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.086	ND	ND
18 B12 NC SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 B12 MN SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 B12 NC SR10C	ND	0.84	ND	ND	ND	ND	0.41	ND	0.89	ND	ND	**1.58**	ND	0.89	ND	ND	**2.75**	ND	ND
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	0.086	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.109	ND	ND
22 B12 NC CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.186**	ND	ND
24 B12 NC L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26 B12 NC L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.061	ND	ND
28 B12 NC L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL **Sample ID**	**Tetra 42**	**Tetra 44**	**Tetra 45**	**Tetra 46**	**Tetra 47**	**Tetra 48**	**Tetra 49**	**Tetra 51**	**Tetra 52**	**Tetra 53**	**Tetra 54**	**Tetra 56**	**Tetra 59**	**Tetra 60**	**Tetra 63**	**Tetra 64**	**Tetra 66**	**Tetra 67**	**Tetra 69**
30 B12 NC L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

Red font indicates >MDL Sample ID	Tetra 70	Tetra 71	Tetra 73	Tetra 74	Tetra 75	Tetra 77	Tetra 81	Penta 82	Penta 83	Penta 84	Penta 85	Penta 87/115	Penta 90	Penta 91	Penta 92	Penta 93	Penta 95	Penta 97	Penta 99
1 B12 NC TO1	0.768	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.319	ND	ND	ND	ND	ND
2 B12 NC TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 B12 NC TO3	1.33	ND	ND	ND	ND	ND	2.96	0.405	ND	ND	ND	1.95	ND	0.619	ND	ND	1.45	0.965	1.19
4 B12 MN TO1	0.291	ND	ND	ND	ND	ND	0.554	ND	ND	ND	ND	ND	ND	0.477	ND	ND	ND	ND	ND
5 B12 MN TO2	0.434	ND	ND	ND	ND	ND	1.39	0.241	ND	ND	ND	0.965	ND	0.538	ND	0.396	0.662	ND	0.548
6 B12BMN TO3	0.329	ND	ND	ND	ND	ND	0.828	ND	ND	ND	ND	0.552	ND	0.436	ND	ND	0.442	ND	0.254
7 B12 NC SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	0.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	ND	ND	ND	0.08	0.09
10 B12 MN SR3C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11 B12 NC SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13	ND	ND	0.08	ND	0.07
13 B12 MN SR5C	0.331	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.123	ND	0.083	ND	0.105	0.254	0.045	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	0.279	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.085	ND	0.143	ND	0.094	0.095	ND	ND
15 B12 NC SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.298	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	0.361	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.188	ND	ND	0.169	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	0.262	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.067	ND	ND	0.167	ND	ND	0.069	ND	ND
18 B12 NC SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.417	ND	ND	ND	ND	ND	ND	ND
19 B12 MN SR9C	0.129	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.112	ND	ND	ND	ND	ND
20 B12 NC SR10C	3.96	ND	ND	ND	ND	ND		1.25	0.43	2.21	1.36	5.84	ND	0.88	1.49		4.41	3.44	3.8
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.236	0.202	ND	0.24	ND	ND	0.13	ND	0.091
22 B12 NC CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	0.186	ND	ND	ND	ND	ND	ND	0.116	ND	ND	0.124	0.384	ND	0.129	ND	0.184	0.159	ND	0.185
24 B12 NC L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26 B12 NC L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	0.294	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.237	ND	ND	ND	ND	ND
28 B12 NC L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.099

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL Sample ID	Tetra 70	Tetra 71	Tetra 73	Tetra 74	Tetra 75	Tetra 77	Tetra 81	Penta 82	Penta 83	Penta 84	Penta 85	Penta 87/115	Penta 90	Penta 91	Penta 92	Penta 93	Penta 95	Penta 97	Penta 99
30 B12 NC L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

Red font indicates >MDL Sample ID	Penta 100	Penta 101	Penta 103	Penta 104	Penta 105	Penta 107	Penta 110	Penta 114	Penta 115	Penta 117	Penta 118	Penta 119	Penta 122	Penta 123	Penta 124	Penta 126	Hexa 128	Hexa 129	Hexa 130
1 B12 NC TO1	ND	0.785	ND	ND	ND	ND	ND	ND	ND	ND	**0.981**	ND	ND	ND	ND	ND	ND	ND	ND
2 B12 NC TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 B12 NC TO3	ND	**3.43**	ND	ND	0.483	ND	**4**	ND	ND	ND	**2.91**	ND	ND	ND	ND	ND	ND	ND	ND
4 B12 MN TO1	ND	ND	ND	ND	ND	ND	0.427	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5 B12 MN TO2	ND	**1.49**	ND	ND	**0.782**	ND	**1.86**	ND	ND	ND	**1.93**	ND	ND	ND	ND	ND	0.347	ND	ND
6 B12BMN TO3	ND	0.441	ND	ND	ND	ND	0.668	ND	ND	ND	0.544	ND	ND	ND	ND	ND	ND	ND	ND
7 B12 NC SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	**0.17**	ND	ND	ND	ND	ND	ND	ND	ND	**0.19**	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	**0.22**	ND	ND	0.07	ND	ND	ND	ND	ND	**0.24**	ND	ND	ND	ND	ND	ND	ND	ND
10 B12 MN SR3C	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.64	ND
11 B12 NC SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.96	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	0.14	ND	ND	ND	ND	**0.21**	ND	0.05	ND	0.15	ND	ND	ND	ND	ND	0.04	ND	ND
13 B12 MN SR5C	ND	0.089	ND	ND	0.05	ND	**0.283**	ND	ND	ND	0.12	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	0.122	ND	ND	ND	ND	**0.205**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
15 B12 NC SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	0.141	ND	ND	0.036	ND	**0.205**	ND	ND	ND	0.151	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	0.097	ND	ND	ND	ND	0.125	ND	ND	ND	0.101	ND	ND	ND	ND	ND	ND	ND	ND
18 B12 NC SR9C	ND	0.44	ND	ND	ND	ND	0.578	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 B12 MN SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND	ND	ND	ND	ND
20 B12 NC SR10C	ND	**10.3**	ND	ND	**3.23**	ND	**11.8**	ND	ND	ND	**8.29**	ND	ND	ND	ND	ND	ND	ND	0.424
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	ND	0.153	ND	ND	**0.504**	ND	**0.249**	ND	ND	ND	**0.205**	ND	ND	ND	ND	ND	ND	ND	ND
22 B12 NC CONTROL C	ND	0.452	ND	ND	ND	ND	ND	ND	ND	ND	0.472	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	**0.519**	ND	ND	**0.455**	ND	**0.881**	ND	ND	ND	**0.966**	ND	ND	ND	ND	ND	ND	ND	ND
24 B12 NC L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.072	ND	ND	ND	ND	ND	ND	ND	ND
26 B12 NC L5C	ND	0.281	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	0.089	ND	ND	ND	ND	ND	ND	ND	ND	0.073	ND	ND	ND	ND	ND	ND	ND	ND
28 B12 NC L6C	ND	0.34	ND	ND	ND	ND	ND	ND	ND	ND	0.57	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	0.093	ND	ND	ND	ND	0.107	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL Sample ID	Penta 100	Penta 101	Penta 103	Penta 104	Penta 105	Penta 107	Penta 110	Penta 114	Penta 115	Penta 117	Penta 118	Penta 119	Penta 122	Penta 123	Penta 124	Penta 126	Hexa 128	Hexa 129	Hexa 130
30 B12 NC L7C	ND	0.459	ND	ND	ND	ND	ND	ND	ND	ND	0.667	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	0.071	ND	ND	ND	ND	0.152	ND	ND	ND	0.062	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

Red font indicates >MDL Sample ID	Hexa 131	Hexa 132	Hexa 134	Hexa 135	Hexa 136	Hexa 137	Hexa 138/163	Hexa 141	Hexa 144	Hexa 146	Hexa 147	Hexa 149	Hexa 151	Hexa 153	Hexa 154	Hexa 156	Hexa 157	Hexa 158	Hexa 163
1 B12 NC TO1	ND		ND	ND	ND	ND	0.381	ND	ND	ND	ND	ND	ND	0.311	ND	ND	ND	ND	ND
2 B12 NC TO2	ND	ND	ND	ND	ND	ND	0.27	ND	ND	ND	ND	ND	ND	0.31	ND	ND	ND	ND	ND
3 B12 NC TO3	ND		ND	ND	ND	ND	**1.75**	ND	ND	ND	ND	**1.98**	ND	**1.24**	ND	ND	ND	ND	ND
4 B12 MN TO1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5 B12 MN TO2	ND		ND	ND	ND	ND	**1.63**	ND	ND	ND	ND	**0.727**	ND	**1.247**	ND	ND	ND	ND	ND
6 B12BMN TO3	ND		ND	ND	ND	ND	0.632	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7 B12 NC SR1C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND		ND	ND	ND	ND	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND		ND	ND	ND	ND	**0.16**	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND	ND
10 B12 MN SR3C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11 B12 NC SR4C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.69	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 B12 MN SR5C	ND		ND	ND	ND	ND	0.139	ND	ND	ND	ND	ND	ND	0.06	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
15 B12 NC SR7C	ND	ND	ND	ND	ND	ND	0.354	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND		ND	ND	ND	ND	0.073	ND	ND	ND	ND	ND	ND	0.075	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND		ND	ND	ND	ND	0.08	0.094	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18 B12 NC SR9C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 B12 MN SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 B12 NC SR10C	ND		ND	0.867	**1.07**	0.433	**6.26**	**1.9**	0.445	0.654	ND	**4.77**	**1.19**	**5.29**	ND	0.588	0.827	ND	ND
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22 B12 NC CONTROL C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND		ND	0.107	ND	ND	**1.05**	ND	ND	ND	ND	**0.453**	0.062	**0.681**	ND	ND	ND	ND	ND
24 B12 NC L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26 B12 NC L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28 B12 NC L6C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL Sample ID	Hexa 131	Hexa 132	Hexa 134	Hexa 135	Hexa 136	Hexa 137	Hexa 138/163	Hexa 141	Hexa 144	Hexa 146	Hexa 147	Hexa 149	Hexa 151	Hexa 153	Hexa 154	Hexa 156	Hexa 157	Hexa 158	Hexa 163
30 B12 NC L7C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g

Red font indicates >MDL Sample ID	Hexa 164	Hexa 165	Hexa 167	Hexa 169	Hepta 170	Hepta 171	Hepta 172	Hepta 173	Hepta 174	Hepta 175	Hepta 176	Hepta 177	Hepta 178	Hepta 179	Hepta 180	Hepta 183	Hepta 184	Hepta 185	Hepta 187
1 B12 NC TO1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 B12 NC TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 B12 NC TO3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.09**	ND	ND	ND	ND
4 B12 MN TO1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5 B12 MN TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6 B12BMN TO3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7 B12 NC SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10 B12 MN SR3C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11 B12 NC SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 B12 MN SR5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
15 B12 NC SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18 B12 NC SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 B12 MN SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 B12 NC SR10C	ND	ND	ND	ND	ND	ND	ND	ND	0.652	ND	ND	0.616	ND	ND	**2.5**	0.542	ND	ND	0.836
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22 B12 NC CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24 B12 NC L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26 B12 NC L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28 B12 NC L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL Sample ID	Hexa 164	Hexa 165	Hexa 167	Hexa 169	Hepta 170	Hepta 171	Hepta 172	Hepta 173	Hepta 174	Hepta 175	Hepta 176	Hepta 177	Hepta 178	Hepta 179	Hepta 180	Hepta 183	Hepta 184	Hepta 185	Hepta 187
30 B12 NC L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL Sample ID	Hepta 189	Hepta 190	Hepta 191	Hepta 193	Octa 194	Octa 195	Octa 196	Octa 197	Octa 199	Octa 200	Octa 201	Octa 202	Octa 203	Octa 205	Nona 206	Nona 207	Nona 208
1 B12 NC TO1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2 B12 NC TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3 B12 NC TO3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4 B12 MN TO1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5 B12 MN TO2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6 B12BMN TO3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7 B12 NC SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8 B12 MN SR1C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9 B12 MN SR2C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10 B12 MN SR3C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11 B12 NC SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12 B12 MN SR4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13 B12 MN SR5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14 B12 MN SR6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
15 B12 NC SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16 B12 MN SR7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 B12 MN SR8C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18 B12 NC SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19 B12 MN SR9C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20 B12 NC SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
21 B12 MN SR10C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
22 B12 NC CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23 B12 MN CONTROL C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24 B12 NC L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25 B12 MN L4C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26 B12 NC L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27 B12 MN L5C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28 B12 NC L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29 B12 MN L6C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.c. Concentrations of PCB Congeners in Tissue - 10-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g Red font indicates >MDL Sample ID	Hepta 189	Hepta 190	Hepta 191	Hepta 193	Octa 194	Octa 195	Octa 196	Octa 197	Octa 199	Octa 200	Octa 201	Octa 202	Octa 203	Octa 205	Nona 206	Nona 207	Nona 208
30 B12 NC L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31 B12 MN L7C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1.d. Concentrations of PCB Congeners in Tissue - 21-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

J values - < reporting limit but > detection limit
below detection limit but still a recognizable peak

Units = ng/g					Surrogates		1	3	5	6	7	8	9	12	13	14	15	16
Lab ID	**Sample ID**	**% Lipids**	**Report Limit**	**Det Limit**	**TMX %Rec**	**209 %Rec**	**Mono**	**Mono**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Tri**
1	SR B22 2 Mn	0.56	0.17	0.043	40.0	64.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2	SR B22 3 Mn	0.64	0.2	0.050	49.5	55.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3	SR B22 4 Mn	0.63	0.19	0.048	45.0	53.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
4	SR B22 4 Nc	0.92	0.73	0.183	38.9	75.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
5	SR B22 5 MN	0.78	0.2	0.050	60.0	77.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6	SR B22 5 Nc	0.49	0.51	0.128	35.8	73.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
7	SR B22 6 Mn	0.46	0.19	0.048	67.5	83.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
8	SR B22 7 Mn	0.85	0.18	0.045	48.5	53.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
9	SR B22 7 Nc	0.76	0.19	0.048	51.5	60.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
10	SR B22 8 Mn	0.57	0.19	0.048	40.3	57.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11	SR B22 8 Nc	0.82	0.76	0.190	37.6	68.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
12	SR B22 9 Mn	0.69	0.2	0.050	57.0	55.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
13	SR B22 9 Nc	0.87	0.31	0.078	38.4	62.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
14	SR B22 10 Mn	0.73	0.19	0.048	43.4	66.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
15	SR B22 10 Nc	1.1	0.2	0.050	53.5	66.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
16	SR B22 1R 1C	0.77	0.19	0.048	59.5	82.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
17	L B22 4 Mn	0.57	0.17	0.043	61.0	73.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
18	L B22 4 Nc	1.4	0.2	0.050	37.7	52.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
19	L B22 5 Mn	0.67	0.17	0.043	58.0	52.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
20	L B22 5 Nc	1.4	0.19	0.048	51.5	72.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**1.3**	**1.35**
21	L B22 6 Mn	0.64	0.19	0.048	59.0	66.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
22	L B22 6 Nc	1.6	0.2	0.050	62.5	57.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
23	L B22 7 Mn	0.82	0.2	0.050	54.0	67.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
24	L B22 7 Nc	0.4	0.17	0.043	38.6	58.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
25	T0 B22 1 Mn	0.5	0.17	0.043	46.4	51.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
26	T0 B22 2 MN	0.56	0.18	0.045	56.5	62.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
27	T0 B22 5 Mn	0.5	0.2	0.050	52.5	47.1	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
28	T0 B22 1 Nc	1.2	0.37	0.093	43.2	67.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
29	T0 B22 2 Nc	1	0.19	0.048	43.5	64.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
30	T0 B22 3 Nc	0.95	0.2	0.050	50.5	71.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	Blank		0.2	0.05	37.0	70.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	BS %Rec				33.0	74.5			91.5									
	BSD %Rec				32.0	71.5			89.5									
7MS %Rec	SR B22 6 Mn				7.9	12			98.7									
7MSD %Rec	SR B22 6 Mn				9.4	13.9			111.4									
23MS %Rec	L B22 7 Mn				9.61	10.7			107.4									
23MSD %Rec	L B22 7 Mn				6.35	10.9			94.9									

Table 1.d. Concentrations of PCB Congeners in Tissue - 21-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g		17	18	19	20	22	24	25	26	27	28/31	29	32	33	34	35	37	40	41
Lab ID	**Sample ID**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tetra**	**Tetra**
1	SR B22 2 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2	SR B22 3 Mn	nd	nd	nd	nd	nd	**0.175**	nd	nd	**0.177**	nd	nd	nd	nd	nd	nd	nd	nd	nd
3	SR B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
4	SR B22 4 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
5	SR B22 5 MN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.111**	nd
6	SR B22 5 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
7	SR B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
8	SR B22 7 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
9	SR B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
10	SR B22 8 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11	SR B22 8 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
12	SR B22 9 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
13	SR B22 9 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
14	SR B22 10 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
15	SR B22 10 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
16	SR B22 1R 1C	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
17	L B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
18	L B22 4 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
19	L B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
20	L B22 5 Nc	nd	**0.192**	nd	nd	nd		**0.122**	**0.144**	nd	nd	nd	**0.24**	**0.152**	nd	nd	nd	**0.136**	nd
21	L B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
22	L B22 6 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
23	L B22 7 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
24	L B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
25	T0 B22 1 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
26	T0 B22 2 MN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
27	T0 B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
28	T0 B22 1 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
29	T0 B22 2 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
30	T0 B22 3 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	Blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	BS %Rec		80.5								86.5								
	BSD %Rec		85								89								
7MS %Rec	SR B22 6 Mn		93.3								94.1								
7MSD %Rec	SR B22 6 Mn		103.5								96.9								
23MS %Rec	L B22 7 Mn		97.8								97.0								
23MSD %Rec	L B22 7 Mn		86.2								82.8								

Table 1.d. Concentrations of PCB Congeners in Tissue - 21-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g		42	44	45	46	47	48	49	51	52	53	54	56	59	60	63	64	66	67/100
Lab ID	Sample ID	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra/Penta
1	SR B22 2 Mn	nd	nd	nd	nd	nd	nd	nd	nd	0.064	nd	nd	nd	nd	nd	nd	nd	nd	nd
2	SR B22 3 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3	SR B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
4	SR B22 4 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
5	SR B22 5 MN	nd	0.131	nd	nd	nd	nd	nd	nd	0.22	nd	nd	0.356	nd	nd	nd	nd	0.15	nd
6	SR B22 5 Nc	nd	nd	nd	nd	nd	nd	nd	nd	0.177	nd	nd	nd	nd	nd	nd	nd	nd	nd
7	SR B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
8	SR B22 7 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
9	SR B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	0.103	nd	nd	nd	nd	nd	nd	nd	nd	nd
10	SR B22 8 Mn	nd	nd	nd	nd	nd	nd	nd	nd	0.111	nd	0.154	nd	nd	nd	nd	nd	nd	nd
11	SR B22 8 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
12	SR B22 9 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
13	SR B22 9 Nc	nd	0.124	nd	nd	nd	nd	nd	nd	0.119	nd	nd	nd	nd	nd	nd	nd	nd	nd
14	SR B22 10 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
15	SR B22 10 Nc	nd	nd	nd	nd	nd	nd	nd	nd	0.166	nd	nd	nd	nd	nd	nd	nd	nd	nd
16	SR B22 1R 1C	nd	nd	nd	nd	nd	nd	nd	nd	0.134	nd	nd	nd	nd	0.176	nd	nd	0.106	nd
17	L B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
18	L B22 4 Nc	nd	nd	nd	nd	nd	nd	nd	nd	0.145	nd	nd	nd	nd	nd	nd	nd	0.08	nd
19	L B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	0.249	nd	nd	nd	nd	nd	nd	nd	nd	nd
20	L B22 5 Nc	0.455	1.6	0.076	nd	0.412	0.134	1.63	nd	3.67		nd	nd	nd	0.276	nd	1.68	1.25	
21	L B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	0.088	nd	nd	nd	nd	nd	nd	nd	0.051	nd
22	L B22 6 Nc	nd	nd	nd	nd	nd	nd	nd	nd	0.123	nd	nd	nd	nd	nd	nd	nd	nd	nd
23	L B22 7 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
24	L B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
25	T0 B22 1 Mn	nd	0.056	nd	nd	nd	nd	nd	nd	0.055	nd	nd	nd	nd	nd	nd	nd	nd	nd
26	T0 B22 2 MN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
27	T0 B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
28	T0 B22 1 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
29	T0 B22 2 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
30	T0 B22 3 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	Blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	BS %Rec		84.5							83.5								93	
	BSD %Rec		85							86								93.5	
7MS %Rec	SR B22 6 Mn		86.7							88.0								90.7	
7MSD %Rec	SR B22 6 Mn		94.7							90.0								100.8	
23MS %Rec	L B22 7 Mn		91.9							92.6								95.9	
23MSD %Rec	L B22 7 Mn		82.9							83.7								87.4	

Table 1.d. Concentrations of PCB Congeners in Tissue - 21-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g		69	70	71	73	74	75	77	81/117	82	83	84	85	87/115	90/101	91	92	93	95
Lab ID	**Sample ID**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra/Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
1	SR B22 2 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.05	nd	nd	nd	nd
2	SR B22 3 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.069	nd	nd	nd	nd	nd
3	SR B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
4	SR B22 4 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
5	SR B22 5 MN	nd	nd	nd	nd	nd	nd	nd	nd	0.17	nd	nd	nd	0.185	0.545	nd	nd	0.092	0.426
6	SR B22 5 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.182	nd	nd	nd	nd
7	SR B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
8	SR B22 7 Mn	nd	nd	nd	nd	nd	nd	0.046	nd	nd	nd	nd	nd	nd	0.073	nd	nd	nd	0.11
9	SR B22 7 Nc	nd	0.055	nd	nd	nd	nd	nd	0.092	nd	nd	nd	nd	nd	0.233	nd	nd	nd	0.144
10	SR B22 8 Mn	nd	nd	nd	nd	nd	nd	nd	0.075	nd	nd	nd	0.236	nd	nd	nd	nd	0.048	0.156
11	SR B22 8 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.291	nd	nd	nd	nd
12	SR B22 9 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.068	nd	nd	nd	nd
13	SR B22 9 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.228	nd	nd	0.123	0.097
14	SR B22 10 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.17	0.313	nd	nd	nd	0.388
15	SR B22 10 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.216	nd	nd	nd	0.131
16	SR B22 1R 1C	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.065	0.206	nd	nd	0.07	0.115
17	L B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.152	nd	nd	nd	nd
18	L B22 4 Nc	nd	0.094	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.175	0.337	nd	nd	nd	0.33
19	L B22 5 Mn	nd	0.13	nd	nd	nd	nd	nd	0.062	nd	nd	nd	nd	0.178	0.5	0.142	nd	nd	0.534
20	L B22 5 Nc	nd	1.55	1.69	nd	nd	0.182	nd	0.182	0.411	0.274	nd	nd	1.35	4.38	0.54	0.897		5.42
21	L B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.1	0.254	nd	nd	nd	0.207
22	L B22 6 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.157	nd	nd	nd	0.081
23	L B22 7 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.05	nd	nd	nd	nd	nd
24	L B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
25	T0 B22 1 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.1	nd	nd	nd	nd
26	T0 B22 2 MN	nd	nd	nd	nd	nd	nd	nd	0.046	nd	nd	nd	nd	nd	0.13	nd	nd	nd	nd
27	T0 B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
28	T0 B22 1 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
29	T0 B22 2 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
30	T0 B22 3 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	Blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	BS %Rec													74.5	83.5				
	BSD %Rec													76	83.5				
7MS %Rec	SR B22 6 Mn													82.5	81.6				
7MSD %Rec	SR B22 6 Mn													80.0	90.1				
23MS %Rec	L B22 7 Mn													81.4	86.5				
23MSD %Rec	L B22 7 Mn													70.3	78.9				

Table 1.d. Concentrations of PCB Congeners in Tissue - 21-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g		97	99	103	104	105/132/153	107	110	114	118	119	122	123	124	126	128	129	130	131
Lab ID	**Sample ID**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta/Hexa**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
1	SR B22 2 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2	SR B22 3 Mn	**0.07**	nd	nd	nd	**0.394**	nd	nd	nd	**0.162**	nd	nd	nd	nd	nd	nd	nd	nd	nd
3	SR B22 4 Mn	nd	nd	nd	nd	**0.119**	nd	nd	nd	**nd**	nd	nd	nd	nd	nd	nd	nd	nd	nd
4	SR B22 4 Nc	nd	nd	nd	nd	**0.386**	nd	nd	nd	**0.221**	nd	nd	nd	nd	nd	nd	nd	nd	nd
5	SR B22 5 MN	**0.168**	nd	nd	nd	**0.687**	nd	nd	nd	**0.501**	nd	nd	nd	nd	nd	nd	nd	nd	nd
6	SR B22 5 Nc	nd	nd	nd	nd	**0.271**	nd	**0.132**	nd	**0.176**	nd	nd	nd	nd	nd	nd	nd	nd	nd
7	SR B22 6 Mn	nd	nd	nd	nd	**0.077**	nd	nd	nd	**nd**	nd	nd	nd	nd	nd	nd	nd	nd	nd
8	SR B22 7 Mn	nd	nd	nd	nd	**0.181**	nd	**0.101**	nd	**0.074**	nd	nd	nd	nd	nd	nd	nd	nd	nd
9	SR B22 7 Nc	**0.12**	**0.112**	nd	nd	**0.312**	nd	**0.17**	nd	**0.225**	nd	nd	nd	nd	nd	**0.074**	nd	nd	nd
10	SR B22 8 Mn	nd	nd	nd	nd	**0.279**	nd	nd	nd	**0.121**	nd	nd	nd	nd	nd	nd	nd	nd	nd
11	SR B22 8 Nc	nd	nd	nd	nd	**0.346**	nd	nd	nd	**0.298**	nd	nd	nd	nd	nd	nd	nd	nd	nd
12	SR B22 9 Mn	nd	nd	nd	nd	**0.102**	nd	nd	nd	**nd**	nd	nd	nd	nd	nd	nd	nd	nd	nd
13	SR B22 9 Nc	nd	nd	nd	nd	**0.321**	nd	nd	nd	**0.249**	nd	nd	nd	nd	nd	**0.111**	nd	nd	nd
14	SR B22 10 Mn	**0.198**	nd	nd	nd	**0.699**	nd	**0.762**	nd	**0.406**	nd	nd	nd	nd	nd	nd	nd	nd	nd
15	SR B22 10 Nc	nd	**0.13**	nd	nd	**0.29**	nd	**0.168**	nd	**0.156**	nd	nd	nd	nd	nd	**0.092**	nd	nd	nd
16	SR B22 1R 1C	nd	nd	nd	nd	**0.199**	nd	**0.167**	nd	**0.165**	nd	nd	nd	nd	nd	nd	nd	nd	nd
17	L B22 4 Mn	nd	nd	nd	nd	**0.12**	nd	nd	nd	**0.049**	nd	nd	nd	nd	nd	nd	nd	nd	nd
18	L B22 4 Nc	**0.14**	nd	nd	nd	**0.467**	nd	**0.4**	nd	**0.328**	nd	nd	nd	nd	nd	nd	nd	nd	nd
19	L B22 5 Mn	**0.191**	nd	nd	nd	**0.551**	nd	nd	nd	**0.434**	nd	nd	nd	nd	nd	nd	nd	**nd**	nd
20	L B22 5 Nc	**1.22**	**2.09**	nd	nd	**2.51**	nd	**4.45**	nd	**2.1**	**0.061**	nd	nd	**0.112**	nd	nd	nd	**0.168**	**0.06**
21	L B22 6 Mn	**0.133**	nd	nd	nd	**0.243**	nd	**0.338**	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd	nd
22	L B22 6 Nc	nd	**0.072**	nd	nd	**0.203**	nd	**0.115**	nd	**0.101**	nd	nd	nd	nd	nd	**0.061**	nd	nd	nd
23	L B22 7 Mn	nd	nd	nd	nd	**0.068**	nd	**nd**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
24	L B22 7 Nc	nd	nd	nd	nd	**0.094**	nd	nd	nd	**0.076**	nd	nd	nd	nd	nd	nd	nd	nd	nd
25	T0 B22 1 Mn	nd	nd	nd	nd	nd	nd	**nd**	nd	**nd**	nd	nd	nd	nd	nd	nd	nd	nd	nd
26	T0 B22 2 MN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
27	T0 B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
28	T0 B22 1 Nc	nd	nd	nd	nd	**0.138**	nd	**nd**	nd	**nd**	nd	nd	nd	nd	nd	nd	nd	nd	nd
29	T0 B22 2 Nc	nd	nd	nd	nd	**0.122**	nd	nd	nd	**0.067**	nd	nd	nd	nd	nd	nd	nd	nd	nd
30	T0 B22 3 Nc	nd	nd	nd	nd	**0.131**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	Blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	BS %Rec							107											
	BSD %Rec							106.5											
7MS %Rec	SR B22 6 Mn							103.9											
7MSD %Rec	SR B22 6 Mn							116.0											
23MS %Rec	L B22 7 Mn							109.7											
23MSD %Rec	L B22 7 Mn							99.6											

Table 1.d. Concentrations of PCB Congeners in Tissue - 21-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g		134	135	136	137	138/163	141	144	146	147	149	151	154	156	157	158	164	165	167
Lab ID	**Sample ID**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
1	SR B22 2 Mn	nd	nd	nd	nd	0.109	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2	SR B22 3 Mn	nd	nd	nd	nd	0.556	nd	nd	nd	nd	0.211	nd	nd	nd	nd	0.056	nd	nd	nd
3	SR B22 4 Mn	nd	nd	nd	nd	0.191	0.055	nd	nd	nd	0.078	nd	nd	nd	nd	nd	nd	nd	nd
4	SR B22 4 Nc	nd	nd	nd	nd	0.435	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
5	SR B22 5 MN	nd	nd	nd	nd	0.7	0.204	nd	nd	nd	0.316	nd	nd	nd	nd	0.09	nd	nd	nd
6	SR B22 5 Nc	nd	nd	nd	nd	0.34	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
7	SR B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.048	nd	nd	nd	nd	nd	nd	nd	nd
8	SR B22 7 Mn	nd	nd	nd	nd	0.299	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
9	SR B22 7 Nc	nd	nd	nd	nd	0.42	nd	nd	nd	nd	0.171	nd	nd	nd	nd	nd	nd	nd	nd
10	SR B22 8 Mn	nd	nd	nd	nd	0.884	0.128	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11	SR B22 8 Nc	nd	nd	nd	nd	0.622	0.291	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
12	SR B22 9 Mn	nd	nd	nd	nd	0.184	0.034	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
13	SR B22 9 Nc	nd	nd	nd	nd	0.453	nd	nd	nd	nd	0.269	nd	nd	nd	nd	nd	nd	nd	nd
14	SR B22 10 Mn	nd	nd	nd	nd	0.728	nd	nd	0.184	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
15	SR B22 10 Nc	nd	nd	nd	nd	0.348	0.102	nd	0.056	nd	0.147	nd	nd	nd	nd	nd	nd	nd	nd
16	SR B22 1R 1C	nd	nd	nd	nd	0.31	0.081	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
17	L B22 4 Mn	nd	nd	nd	nd	0.183	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
18	L B22 4 Nc	nd	nd	nd	nd	0.523	0.094	nd	nd	nd	0.233	nd	nd	0.123	0.16	nd	nd	nd	nd
19	L B22 5 Mn	nd	0.081	nd	nd	0.555	0.083	nd	nd	nd	nd	0.062	nd	0.054	0.121	0.111	nd	nd	nd
20	L B22 5 Nc	nd	0.395	0.373	nd	2.03	0.439	0.137	nd	0.077	1.32	nd	nd	0.143	0.09	0.383	nd	nd	nd
21	L B22 6 Mn	nd	nd	nd	nd	0.298	0.066	nd	nd	nd	nd	nd	nd	nd	0.07	nd	nd	nd	nd
22	L B22 6 Nc	nd	nd	nd	nd	0.302	nd	nd	nd	nd	0.153	nd	nd	nd	0.058	nd	nd	nd	nd
23	L B22 7 Mn	nd	nd	nd	nd	0.117	0.025	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
24	L B22 7 Nc	nd	nd	nd	nd	0.108	0.069	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
25	T0 B22 1 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
26	T0 B22 2 MN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
27	T0 B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
28	T0 B22 1 Nc	nd	nd	nd	nd	0.18	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
29	T0 B22 2 Nc	nd	nd	nd	nd	0.207	0.111	nd	nd	0.065	0.053	nd	nd	nd	nd	nd	nd	nd	nd
30	T0 B22 3 Nc	nd	nd	nd	nd	0.187	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	Blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	BS %Rec					18.4	20.6					16.5							
	BSD %Rec					91.5	102					81.5							
7MS %Rec	SR B22 6 Mn					90.0	102.4					82.1							
7MSD %Rec	SR B22 6 Mn					100.8	115.4					92.2							
23MS %Rec	L B22 7 Mn					94.3	105.5					85.9							
23MSD %Rec	L B22 7 Mn					84.2	98.3					79.7							

Table 1.d. Concentrations of PCB Congeners in Tissue - 21-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g		169	170	171	172	173	174	175	176	177	178	179	180	183	184	185	187	189	190
Lab ID	**Sample ID**	**Hexa**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
1	SR B22 2 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2	SR B22 3 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.123**	**0.112**	nd	nd	nd	nd	nd
3	SR B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.053**	nd	nd
4	SR B22 4 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.192**	nd	nd	nd	nd	nd	nd
5	SR B22 5 MN	nd	nd	nd	nd	nd	**0.058**	nd	nd	nd	nd	nd	**0.21**	nd	nd	nd	**0.133**	nd	nd
6	SR B22 5 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.156**	nd	nd	nd	nd	nd	nd
7	SR B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
8	SR B22 7 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
9	SR B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
10	SR B22 8 Mn	nd	nd	nd	nd	nd	**0.087**	nd	nd	nd	nd	nd	**0.23**	nd	nd	nd	nd	nd	nd
11	SR B22 8 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
12	SR B22 9 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
13	SR B22 9 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.155**	nd	nd	nd	nd	nd	nd	nd	nd
14	SR B22 10 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
15	SR B22 10 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.058**	nd	**0.123**	nd	nd	nd	nd	nd	nd
16	SR B22 1R 1C	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
17	L B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
18	L B22 4 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
19	L B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.054**	nd	nd
20	L B22 5 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.439**	**0.231**	**0.12**	nd	nd	nd	nd	nd
21	L B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
22	L B22 6 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.091**	nd	nd	nd	nd	nd	nd
23	L B22 7 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
24	L B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.05**	nd	nd	nd	nd	nd	nd
25	T0 B22 1 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
26	T0 B22 2 MN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.234**	nd	nd
27	T0 B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
28	T0 B22 1 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
29	T0 B22 2 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
30	T0 B22 3 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.076**	nd	nd	nd	nd	nd	nd
	Blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	BS %Rec		17.4										16.9	16.1			16.1		
	BSD %Rec		91.5										85	81			81		
7MS %Rec	SR B22 6 Mn		83.8										82.0	83.9			77.8		
7MSD %Rec	SR B22 6 Mn		97.5										91.8	81.3			89.4		
23MS %Rec	L B22 7 Mn		93.2										84.5	80.7			81.5		
23MSD %Rec	L B22 7 Mn		84.2										77.9	75.0			75.4		

Table 1.d. Concentrations of PCB Congeners in Tissue - 21-Month Event
Method 8082 ERDC Environmental Laboratory
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g		191	193	194	195	196	197	199	200	201	202	203	205	206	207	208
Lab ID	**Sample ID**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Nona**	**Nona**	**Nona**
1	SR B22 2 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
2	SR B22 3 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
3	SR B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
4	SR B22 4 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
5	SR B22 5 MN	nd	nd	**0.109**	nd	**nd**	nd	nd	nd	nd	**0.054**	nd	nd	**0.059**	nd	nd
6	SR B22 5 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.094**	nd	nd
7	SR B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
8	SR B22 7 Mn	nd	nd	**0.035**	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
9	SR B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**0.059**	nd	nd
10	SR B22 8 Mn	nd	**0.094**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11	SR B22 8 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
12	SR B22 9 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
13	SR B22 9 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
14	SR B22 10 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
15	SR B22 10 Nc	nd	**nd**	nd	nd	nd	nd	**0.054**	nd	nd	nd	nd	nd	**nd**	nd	nd
16	SR B22 1R 1C	nd	nd	nd	nd	**nd**	nd	nd	nd	nd	nd	nd	nd	**0.067**	nd	nd
17	L B22 4 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
18	L B22 4 Nc	nd	nd	**nd**	nd	**nd**	nd	nd	nd	nd	nd	nd	nd	**0.05**	nd	nd
19	L B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
20	L B22 5 Nc	nd	**0.057**	**0.088**	nd	nd	nd	**0.067**	nd	nd	nd	nd	nd	**0.052**	nd	nd
21	L B22 6 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
22	L B22 6 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
23	L B22 7 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
24	L B22 7 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
25	T0 B22 1 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
26	T0 B22 2 MN	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
27	T0 B22 5 Mn	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
28	T0 B22 1 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
29	T0 B22 2 Nc	nd	**0.051**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
30	T0 B22 3 Nc	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**nd**	nd	nd
	Blank	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	BS %Rec													16.1		
	BSD %Rec													82.5		
7MS %Rec	SR B22 6 Mn													73.6		
7MSD %Rec	SR B22 6 Mn													86.9		
23MS %Rec	L B22 7 Mn													76.8		
23MSD %Rec	L B22 7 Mn													73.0		

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g					**TMX**	**209**	**Mono**	**Mono**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**
Lab ID	**Sample ID**	**%Lipids**	**Det Limit**	**Report Limit**	**%Rec**	**%Rec**	**1**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**13**	**14**
5072910-11	B33-6B-MN	0.241	0.0484	0.242	61	81.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-12	B33-T0-MN-1	0.17	0.0498	0.249	70.5	86.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-13	B33-T0-MN-2	0.197	0.0494	0.247	65.5	85.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-14	B33-T0-MN-3	0.372	0.0498	0.249	63.5	83	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-15	B33-1-MN	0.785	0.0494	0.247	48.85	56.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-16	B33-2-MN	0.29	0.048	0.24	69.345	90.845	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-17	B33-3-MN	0.222	0.0494	0.247	69.03	80	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-18	B33-4-MN	0.246	0.0472	0.236	52	59.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-19	B33-5-MN	0.308	0.0462	0.231	48.555	60.545	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-20	B33-6A-MN	0.504	0.0452	0.226	42.1	53	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-21	B33-8-MN	0.594	0.0484	0.242	49.45	63.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-22	B33-9-MN	0.417	0.0484	0.242	52.5	47.75	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-23	B33-10-MN	0.336	0.0474	0.237	55.52	83.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-24	B33-8B-MN	0.303	0.0488	0.244	46.35	61.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g

Lab ID	Sample ID	%Lipids	Det Limit	Report Limit	TMX %Rec	209 %Rec	Mono 1	Mono 3	Di 4	Di 5	Di 6	Di 7	Di 8	Di 9	Di 10	Di 12	Di 13	Di 14
5072910-01	B33-T0-NC1	2.39	0.040	0.198	78	121	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-2	B33-T0-NC2	1.52	0.040	0.198	109	84.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-3	B33-T0-NC3	1.75	0.040	0.199	77	121	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-4	B33-1-NC	1.26	0.059	0.297	92	119	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-5	B33-1-NC	1.39	0.038	0.191	81.5	103	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-6	B33-4-NC	1.17	0.086	0.431	89.5	126	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-7	B33-5-NC	1.56	0.060	0.302	71	105	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-8	B33-6A-NC	1.23	0.038	0.191	89.5	138	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-9	B33-8-NC	1.14	0.071	0.354	92.5	141	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-10	B33-9-NC	1.8	0.103	0.515	84	120	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
							N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Di**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**
Lab ID	**Sample ID**	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**29**	**31**	**32**	**33**	**34**	**35**
5072910-11	B33-6B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-12	B33-T0-MN-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-13	B33-T0-MN-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-14	B33-T0-MN-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-15	B33-1-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-16	B33-2-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-17	B33-3-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-18	B33-4-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-19	B33-5-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-20	B33-6A-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-21	B33-8-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-22	B33-9-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-23	B33-10-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-24	B33-8B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Di**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**
Lab ID	**Sample ID**	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**29**	**31**	**32**	**33**	**34**	**35**
5072910-01	B33-T0-NC1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-2	B33-T0-NC2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-3	B33-T0-NC3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-4	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-5	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-6	B33-4-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-7	B33-5-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-8	B33-6A-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-9	B33-8-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-10	B33-9-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Tri**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
Lab ID	**Sample ID**	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**
5072910-11	B33-6B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-12	B33-T0-MN-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-13	B33-T0-MN-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-14	B33-T0-MN-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-15	B33-1-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-16	B33-2-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-17	B33-3-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-18	B33-4-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-19	B33-5-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.074**	N.D.	**0.124**	N.D.	N.D.	N.D.	N.D.	**0.037**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.		N.D.
-20	B33-6A-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-21	B33-8-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-22	B33-9-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-23	B33-10-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.091**	N.D.	**0.125**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-24	B33-8B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Tri**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
Lab ID	**Sample ID**	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**
5072910-01	B33-T0-NC1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-2	B33-T0-NC2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-3	B33-T0-NC3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-4	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-5	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-6	B33-4-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-7	B33-5-NC	N.D.	N.D.	N.D.	N.D.	**0.088**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-8	B33-6A-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-9	B33-8-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-10	B33-9-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
Lab ID	**Sample ID**	**64**	**66**	**67**	**69**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**	**87/115**	**90/101**	**91**
5072910-11	B33-6B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-12	B33-T0-MN-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-13	B33-T0-MN-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-14	B33-T0-MN-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-15	B33-1-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-16	B33-2-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.181**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-17	B33-3-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.142**	**0.113**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
-18	B33-4-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-19	B33-5-MN	N.D.	**0.075**	N.D.	N.D.	**0.258**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.096**	N.D.	N.D.	**0.144**	**0.396**	**1.241**	**0.216**
		N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.				
-20	B33-6A-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-21	B33-8-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-22	B33-9-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-23	B33-10-MN	N.D.	N.D.	N.D.	N.D.	**0.064**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.14**	**0.159**
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
-24	B33-8B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
Lab ID	**Sample ID**	**64**	**66**	**67**	**69**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**	**87/115**	**90/101**	**91**
5072910-01	B33-T0-NC1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.186**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-2	B33-T0-NC2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-3	B33-T0-NC3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.138**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-4	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.062**	**0.290**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
-5	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.061**	**0.196**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
-6	B33-4-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.132**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-7	B33-5-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.270**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-8	B33-6A-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.141**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-9	B33-8-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.142**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-10	B33-9-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
Lab ID	**Sample ID**	**92**	**93**	**95**	**97**	**99**	**100**	**103**	**104**	**105**	**107**	**110**	**114**	**117**	**118**	**119**	**122**	**123**	**124**
5072910-11	B33-6B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-12	B33-T0-MN-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-13	B33-T0-MN-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-14	B33-T0-MN-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-15	B33-1-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-16	B33-2-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.07**	N.D.	N.D.	**0.09**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-17	B33-3-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.047**	N.D.	N.D.	**0.058**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-18	B33-4-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.034**	N.D.	**0.046**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.
-19	B33-5-MN	N.D.	N.D.	**0.425**	**0.237**	**0.334**	N.D.	N.D.	N.D.	**0.321**	N.D.	**0.627**	N.D.	N.D.	**0.76**	**0.082**	N.D.	N.D.	N.D.
		N.D.	N.D.				N.D.	N.D.	N.D.		N.D.		N.D.	N.D.			N.D.	N.D.	N.D.
-20	B33-6A-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-21	B33-8-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.035**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-22	B33-9-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-23	B33-10-MN	N.D.	N.D.	**0.092**	N.D.	**0.091**	N.D.	N.D.	N.D.	**0.051**	N.D.	**0.121**	N.D.	N.D.	**0.139**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.		N.D.	N.D.	N.D.		N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-24	B33-8B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.026**	N.D.	N.D.	**0.03**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
Lab ID	**Sample ID**	**92**	**93**	**95**	**97**	**99**	**100**	**103**	**104**	**105**	**107**	**110**	**114**	**117**	**118**	**119**	**122**	**123**	**124**
5072910-01	B33-T0-NC1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.154**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-2	B33-T0-NC2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.160**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-3	B33-T0-NC3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-4	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.243**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-5	B33-1-NC	N.D.	N.D.	**0.112**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.146**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-6	B33-4-NC	N.D.	N.D.	**0.303**	N.D.	**0.070**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.168**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-7	B33-5-NC	N.D.	N.D.	**0.209**	**0.159**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.255**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-8	B33-6A-NC	N.D.	N.D.	**0.152**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.148**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-9	B33-8-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.141**	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
-10	B33-9-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Penta**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
Lab ID	**Sample ID**	**126**	**128**	**129**	**130**	**131**	**132/153**	**134**	**135**	**136**	**137**	**138/163/164**	**141**	**144**	**146**	**147**	**149**	**151**	**154**
5072910-11	B33-6B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-12	B33-T0-MN-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-13	B33-T0-MN-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-14	B33-T0-MN-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-15	B33-1-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-16	B33-2-MN	N.D.	N.D.	N.D.	N.D.	N.D.	**0.227**	N.D.	N.D.	N.D.	N.D.	**0.182**	N.D.	N.D.	N.D.	N.D.	**0.098**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
-17	B33-3-MN	N.D.	N.D.	N.D.	N.D.	N.D.	**0.127**	N.D.	N.D.	N.D.	N.D.	**0.103**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-18	B33-4-MN	N.D.	N.D.	N.D.	N.D.	N.D.	**0.118**	N.D.	N.D.	N.D.	N.D.	**0.102**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-19	B33-5-MN	**0.031**	**0.17**	N.D.	**0.038**	N.D.	**0.748**	**0.036**	N.D.	N.D.	N.D.	**0.808**		N.D.	N.D.	N.D.	**0.348**	**0.072**	N.D.
				N.D.		N.D.			N.D.	N.D.	N.D.		**0.069**	N.D.	N.D.	N.D.			N.D.
-20	B33-6A-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-21	B33-8-MN	N.D.	N.D.	N.D.	N.D.	N.D.	**0.067**	N.D.	N.D.	N.D.	N.D.	**0.071**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-22	B33-9-MN	N.D.	N.D.	N.D.	N.D.	N.D.	**0.061**	N.D.	N.D.	N.D.	N.D.	**0.06**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-23	B33-10-MN	N.D.	N.D.	N.D.	N.D.	N.D.	**0.256**	N.D.	N.D.	N.D.	N.D.	**0.255**	N.D.	N.D.	N.D.	N.D.	**0.106**	**0.024**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.			N.D.
-24	B33-8B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	**0.074**	N.D.	N.D.	N.D.	N.D.	**0.059**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Penta**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
Lab ID	**Sample ID**	**126**	**128**	**129**	**130**	**131**	**132/153**	**134**	**135**	**136**	**137**	**138/163/164**	**141**	**144**	**146**	**147**	**149**	**151**	**154**
5072910-01	B33-T0-NC1	N.D.	N.D.	N.D.	N.D.	N.D.	**0.163**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-2	B33-T0-NC2	N.D.	N.D.	N.D.	N.D.	N.D.	**0.188**	N.D.	N.D.	N.D.	N.D.	**0.034**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-3	B33-T0-NC3	N.D.	N.D.	N.D.	N.D.	N.D.	**0.135**	N.D.	N.D.	N.D.	N.D.	**0.038**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-4	B33-1-NC	N.D.	**0.099**	N.D.	N.D.	N.D.	**0.547**	N.D.	N.D.	N.D.	N.D.	**0.501**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-5	B33-1-NC	N.D.	**0.071**	N.D.	N.D.	N.D.	**0.342**	N.D.	N.D.	N.D.	N.D.	**0.395**	N.D.	N.D.	**0.060**	N.D.	**0.130**	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.		N.D.	N.D.
-6	B33-4-NC	N.D.	N.D.	N.D.	N.D.	N.D.	**0.206**	N.D.	N.D.	N.D.	N.D.	**0.344**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-7	B33-5-NC	N.D.	N.D.	N.D.	N.D.	N.D.	**0.370**	N.D.	N.D.	N.D.	N.D.	**1.25**	N.D.	N.D.	N.D.	N.D.	**0.197**	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
-8	B33-6A-NC	N.D.	**0.056**	N.D.	N.D.	N.D.	**0.210**	N.D.	N.D.	N.D.	N.D.	**0.431**	N.D.	N.D.	N.D.	N.D.	**0.086**	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
-9	B33-8-NC	N.D.	N.D.	N.D.	N.D.	N.D.	**0.221**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-10	B33-9-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
Lab ID	**Sample ID**	**156**	**157**	**158**	**165**	**167**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**
5072910-11	B33-6B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-12	B33-T0-MN-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-13	B33-T0-MN-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-14	B33-T0-MN-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-15	B33-1-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-16	B33-2-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.065**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-17	B33-3-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-18	B33-4-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-19	B33-5-MN	**0.095**	**0.089**	**0.096**	N.D.	**0.032**	N.D.	**0.184**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		**0.087**	N.D.
					N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.09**		N.D.
-20	B33-6A-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-21	B33-8-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-22	B33-9-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-23	B33-10-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.08**	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
-24	B33-8B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
Lab ID	**Sample ID**	**156**	**157**	**158**	**165**	**167**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**
5072910-01	B33-T0-NC1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-2	B33-T0-NC2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-3	B33-T0-NC3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-4	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-5	B33-1-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-6	B33-4-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-7	B33-5-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-8	B33-6A-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-9	B33-8-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-10	B33-9-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Octa	Octa	Octa	Octa	Octa	Octa	Octa	Octa	Octa	Octa	Octa
Lab ID	**Sample ID**	**184**	**185**	**187**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**	**202**	**203**	**204**	**205**
5072910-11	B33-6B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-12	B33-T0-MN-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-13	B33-T0-MN-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-14	B33-T0-MN-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-15	B33-1-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-16	B33-2-MN	N.D.	N.D.	**0.066**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	**0.04**	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.
-17	B33-3-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-18	B33-4-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-19	B33-5-MN	N.D.	N.D.	**0.058**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-20	B33-6A-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-21	B33-8-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-22	B33-9-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-23	B33-10-MN	N.D.	N.D.	**0.052**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-24	B33-8B-MN	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**
Lab ID	**Sample ID**	**184**	**185**	**187**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**	**202**	**203**	**204**	**205**
5072910-01	B33-T0-NC1	N.D.	N.D.	**0.054**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-2	B33-T0-NC2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-3	B33-T0-NC3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-4	B33-1-NC	N.D.	N.D.	**0.142**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-5	B33-1-NC	N.D.	N.D.	**0.109**	N.D.	N.D.	N.D.	N.D.	**0.058**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-6	B33-4-NC	N.D.	N.D.	**0.073**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-7	B33-5-NC	N.D.	N.D.	**0.403**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-8	B33-6A-NC	N.D.	N.D.	**0.058**	N.D.	N.D.	N.D.	**0.030**	**0.051**	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-9	B33-8-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
-10	B33-9-NC	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Nona**	**Nona**	**Nona**
Lab ID	**Sample ID**	**206**	**207**	**208**
5072910-11	B33-6B-MN	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-12	B33-T0-MN-1	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-13	B33-T0-MN-2	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-14	B33-T0-MN-3	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-15	B33-1-MN	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-16	B33-2-MN	**0.063**	N.D.	N.D.
			N.D.	N.D.
-17	B33-3-MN	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-18	B33-4-MN	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-19	B33-5-MN	**0.032**	N.D.	N.D.
			N.D.	N.D.
-20	B33-6A-MN	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-21	B33-8-MN	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-22	B33-9-MN	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-23	B33-10-MN	**0.046**	N.D.	N.D.
			N.D.	N.D.
-24	B33-8B-MN	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.

Table 1.e. Concentrations of PCB
Method 8082 ERDC Environmental Laboratory
Congeners in Tissue - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units - ng/g		**Nona**	**Nona**	**Nona**
Lab ID	**Sample ID**	**206**	**207**	**208**
5072910-01	B33-T0-NC1	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-2	B33-T0-NC2	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-3	B33-T0-NC3	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-4	B33-1-NC	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-5	B33-1-NC	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-6	B33-4-NC	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-7	B33-5-NC	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-8	B33-6A-NC	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-9	B33-8-NC	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.
-10	B33-9-NC	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.

Table 2. Concentrations of Total Mercury in Tissue
SPAWAR Systems Center Pacific
San Diego, California

Event	Multi-metric Station	Species	Sample ID	Method	Detect	Total Mercury (ng/g, ww)
Baseline	3	*M. nasuta*	B3-Mn-C	QS-LC/CVAF-001	Yes	17.95
Baseline	4	*M. nasuta*	B4-Mn-R8	QS-LC/CVAF-001	Yes	17.92
Baseline	5	*M. nasuta*	B5-Mn-C	QS-LC/CVAF-001	Yes	19.34
Baseline	8	*M. nasuta*	B8-Mn-C	QS-LC/CVAF-001	Yes	20.44
Baseline	9	*M. nasuta*	B9-Mn-C	QS-LC/CVAF-001	Yes	16.2
10-Month	3	*M. nasuta*	10-B12-MN-SR3C	QS-LC/CVAF-001	Yes	15.46
10-Month	4	*M. nasuta*	12-B12-MN-SR4C	QS-LC/CVAF-001	Yes	14.86
10-Month	5	*M. nasuta*	13-B12-MN-SR5C	QS-LC/CVAF-001	Yes	16.6
10-Month	8	*M. nasuta*	17-B12-MN-SR8C	QS-LC/CVAF-001	Yes	13.54
10-Month	9	*M. nasuta*	19-B12-MN-SR9C	QS-LC/CVAF-001	Yes	27.6
21-Month	3	*M. nasuta*	SR B22 3 Mn	EPA 1631E	No	7.6
21-Month	4	*M. nasuta*	SR B22 4 Mn	EPA 1631E	Yes	9.4
21-Month	5	*M. nasuta*	SR B22 5 MN	EPA 1631E	Yes	14
21-Month	6	*M. nasuta*	SR B22 6 Mn	EPA 1631E	Yes	13
21-Month	8	*M. nasuta*	SR B22 8 Mn	EPA 1631E	Yes	17
21-Month	9	*M. nasuta*	SR B22 9 Mn	EPA 1631E	Yes	20
33-Month	3	*M. nasuta*	B33-3Mn	QS-LC/CVAF-001	Yes	6.66
33-Month	4	*M. nasuta*	B33-4Mn	QS-LC/CVAF-001	Yes	8.85
33-Month	5	*M. nasuta*	B33-5Mn	QS-LC/CVAF-001	Yes	8.36
33-Month	8	*M. nasuta*	B33-8aMn	QS-LC/CVAF-001	Yes	17.33
33-Month	9	*M. nasuta*	B33-9Mn	QS-LC/CVAF-001	Yes	12.56

Table 2. Concentrations of Total Mercury in Tissue
SPAWAR Systems Center Pacific
San Diego, California

Event	Multi-metric Station	Species	Sample ID	Method	Detect	Total Mercury (ng/g, ww)
Baseline	3	*N. caecoides*	B3-Nc-C	QS-LC/CVAF-001	Yes	9.98
Baseline	4	*N. caecoides*	B4-Nc-R6	QS-LC/CVAF-001	Yes	13.44
Baseline	5	*N. caecoides*	B5-Nc-C	QS-LC/CVAF-001	Yes	6.13
Baseline	6	*N. caecoides*	B6-Nc-C	QS-LC/CVAF-001	Yes	7.08
Baseline	8	*N. caecoides*	B8-Nc-C	QS-LC/CVAF-001	Yes	14.91
10-Month	9	*N. caecoides*	18-B12-NC-SR9C	QS-LC/CVAF-001	Yes	33.4
10-Month	10	*N. caecoides*	20-B12-NC-SR10C	QS-LC/CVAF-001	Yes	33.6
21-Month	4	*N. caecoides*	SR B22 4 Nc	EPA 1631E	No	5
21-Month	5	*N. caecoides*	SR B22 5 Nc	EPA 1631E	No	2.2
21-Month	8	*N. caecoides*	SR B22 8 Nc	EPA 1631E	Yes	4
21-Month	9	*N. caecoides*	SR B22 9 Nc	EPA 1631E	Yes	2.8
33-Month	4	*N. caecoides*	B33-4Nc	QS-LC/CVAF-001	Yes	7.245
33-Month	5	*N. caecoides*	B33-5Nc	QS-LC/CVAF-001	Yes	6.916
33-Month	8	*N. caecoides*	B33-8Nc	QS-LC/CVAF-001	Yes	11.63
33-Month	9	*N. caecoides*	B33-9Nc	QS-LC/CVAF-001	Yes	5.413

1.) Detection limit is shown when analyte was not detected.
2.) Quality control criteria was met unless otherwise noted.
3.) In the 21-month event, analysis of some samples were performed outside of holding time due to delays in receipt of additional sample
4.) Results were obtained after exposure to site conditions. No time 0 results have been included in this table.

Table 3. Concentrations of Methylmercury in Tissue
SPAWAR Systems Center Pacific
San Diego, California

Event	Multi-metric Station	Species	Sample ID	Method	Detect	Methylmercury (ng/g, ww)
Baseline	3	*M. nasuta*	B3-Mn-C	QS-LC/CVAF-001	Yes	4.65
Baseline	4	*M. nasuta*	B4-Mn-R8	QS-LC/CVAF-001	Yes	7.82
Baseline	5	*M. nasuta*	B5-Mn-C	QS-LC/CVAF-001	Yes	8.14
Baseline	8	*M. nasuta*	B8-Mn-C	QS-LC/CVAF-001	Yes	8.74
Baseline	9	*M. nasuta*	B9-Mn-C	QS-LC/CVAF-001	Yes	4.4
10-Month	3	*M. nasuta*	10-B12-MN-SR3C	QS-LC/CVAF-001	Yes	1.02
10-Month	4	*M. nasuta*	12-B12-MN-SR4C	QS-LC/CVAF-001	Yes	5.9
10-Month	5	*M. nasuta*	13-B12-MN-SR5C	QS-LC/CVAF-001	Yes	7.29
10-Month	8	*M. nasuta*	17-B12-MN-SR8C	QS-LC/CVAF-001	Yes	4.98
10-Month	9	*M. nasuta*	19-B12-MN-SR9C	QS-LC/CVAF-001	Yes	6.66
21-Month	3	*M. nasuta*	SR B22 3 Mn	EPA 1630	No	0.43
21-Month	4	*M. nasuta*	SR B22 4 Mn	EPA 1630	Yes	1.4
21-Month	5	*M. nasuta*	SR B22 5 MN	EPA 1630	Yes	2.4
21-Month	6	*M. nasuta*	SR B22 6 Mn	EPA 1630	Yes	0.82
21-Month	8	*M. nasuta*	SR B22 8 Mn	EPA 1630	Yes	4.1
21-Month	9	*M. nasuta*	SR B22 9 Mn	EPA 1630	Yes	2.4
33-Month	3	*M. nasuta*	B33-3Mn	QS-LC/CVAF-001	Yes	1.79
33-Month	4	*M. nasuta*	B33-4Mn	QS-LC/CVAF-001	Yes	1.87
33-Month	5	*M. nasuta*	B33-5Mn	QS-LC/CVAF-001	Yes	2.39
33-Month	8	*M. nasuta*	B33-8aMn	QS-LC/CVAF-001	Yes	8.01
33-Month	9	*M. nasuta*	B33-9Mn	QS-LC/CVAF-001	Yes	1.66

Table 3. Concentrations of Methylmercury in Tissue
SPAWAR Systems Center Pacific
San Diego, California

Event	Multi-metric Station	Species	Sample ID	Method	Detect	Methylmercury (ng/g, ww)
Baseline	3	*N. caecoides*	B3-Nc-C	QS-LC/CVAF-001	Yes	5.74
Baseline	4	*N. caecoides*	B4-Nc-R6	QS-LC/CVAF-001	Yes	7.51
Baseline	5	*N. caecoides*	B5-Nc-C	QS-LC/CVAF-001	Yes	1.7
Baseline	6	*N. caecoides*	B6-Nc-C	QS-LC/CVAF-001	Yes	2.07
Baseline	8	*N. caecoides*	B8-Nc-C	QS-LC/CVAF-001	Yes	10.3
10-Month	9	*N. caecoides*	18-B12-NC-SR9C	QS-LC/CVAF-001	Yes	1.79
10-Month	10	*N. caecoides*	20-B12-NC-SR10C	QS-LC/CVAF-001	Yes	1.71
21-Month	4	*N. caecoides*	SR B22 4 Nc	EPA 1630	No	0.34
21-Month	5	*N. caecoides*	SR B22 5 Nc	EPA 1630	No	0.39
21-Month	8	*N. caecoides*	SR B22 8 Nc	EPA 1630	Yes	0.78
21-Month	9	*N. caecoides*	SR B22 9 Nc	EPA 1630	Yes	0.24
33-Month	4	*N. caecoides*	B33-4Nc	QS-LC/CVAF-001	Yes	0.325
33-Month	5	*N. caecoides*	B33-5Nc	QS-LC/CVAF-001	Yes	0.346
33-Month	8	*N. caecoides*	B33-8Nc	QS-LC/CVAF-001	Yes	4.88
33-Month	9	*N. caecoides*	B33-9Nc	QS-LC/CVAF-001	Yes	0.953

1.) Detection limit is shown when analyte was not detected.
2.) Quality control criteria was met unless otherwise noted.
3.) In the 21-month event, analysis of some samples were performed outside of holding time due to delays in receipt of additional sample material due
4.) Results were obtained after exposure to site conditions. No time 0 results have been included in this table.

Abbreviations

SR = SEA Ring
MN = Macoma nasuta
NC = Nephtys caecoides
C = composite
R = replicate
TMX % Rec = 2,4,S,6-tetrachloro-m-xylene percent recovery
209 % Rec = Decachlorobiphenyl percent recovery

Note

1.) Detection limits for each congener/sample is provided in a single column for each sampling event.

Attachment E-1 Lipid Content

The lipid content of test organisms varied over the course of the study (Table 1, Table 2, Figure 1) and the variation appeared to track with the lipid content measured in time 0 (T_0) specimens. For *Macoma nasuta* tissues, the lipid content measured in organisms deployed in the SEA Ring chambers were highest for the baseline event and then lower in each of the subsequent monitoring events which were 1.7, 1.8, and 3 times lower for the 10-, 21-, and 33-month monitoring events, respectively. This is similar to the differences measured in the T_0 *M. nasuta* tissues that also had the highest lipid content in the baseline monitoring event and were 1.6, 1.8, and 3.8 times lower for the 10-, 21-, and 33-month monitoring events, respectively. For each of the monitoring events the average lipid content of the deployed *M. nasuta* specimens was similar to the T_0 specimens for each of the monitoring events, suggesting there were only minor changes in *M. nasuta* lipid levels during the SEA Ring deployments.

For *Nephtys caecoides* tissues, the lipid content measured in organisms deployed in the SEA Ring chambers were highest for the 33-month (1.37%) and baseline (1.14%) events and statistically lower by about 25% for the 10- and 21-month events (Figure 11). This is similar to the differences measured in the T_0 *N. caecoides* tissues that also had the highest lipid content in the 33-month (1.89%) and baseline (1.23%) monitoring events and were lower for the 10- (0.4%) and 21-month (1.05%) monitoring events. For each of the monitoring events, the average lipid content of the deployed *N. caecoides* specimens was very similar to the T_0 specimens, suggesting there were only minor changes in *N. caecoides* lipid levels during the SEA Ring deployments.

Table 1 Summary of Lipid Content in Sediment-Exposed Tissue.

Event	Parameter	*Macoma nasuta* Lipid Content (%)	*Nephtys caecoides* Lipid Content (%)
Baseline	N	10	6
	Mean	1.19%	1.14%
10-month	N	10	7
	Mean	0.70%	0.87%
21-month	N	9	6
	Mean	0.66%	0.83%
33-month	N	9	6
	Mean	0.41%	1.37%

N=number of samples
Sediment-exposed lipid contents (not T_0)

Table 21 Lipid Content in T_0 Tissue

Species	Event	Sample ID	Lipids %, ww
Macoma nasuta	Baseline	B0 MN R1	1.04
		B0 MN R2	0.84
		B0 MN R3	0.94
		T0-Average	**0.94**
	10-month	4 B12 MN TO1	0.70
		5 B12 MN TO2	0.50
		6 B12BMN TO3	0.60
		T0-Average	**0.60**
	21-month	T0 B22 1 Mn	0.50
		T0 B22 2 MN	0.56
		T0 B22 5 Mn	0.50
		T0-Average	**0.52**
	33-month	B33-T0-MN-1	0.17
		B33-T0-MN-2	0.20
		B33-T0-MN-3	0.37
		T0-Average	**0.25**
Nephtys caecoides	Baseline	B0 NC R1	1.27
		B0 NC R2	1.18
		B0 NC R3	1.23
		T0-Average	**1.23**
	10-month	1 B12 NC TO1	0.70
		2 B12 NC TO2	0.20
		3 B12 NC TO3	0.30
		T0-Average	**0.40**
	21-month	T0 B22 1 Nc	1.20
		T0 B22 2 Nc	1.00
		T0 B22 3 Nc	0.95
		T0-Average	**1.05**
	33-month	B33-T0-NC1	2.39
		B33-T0-NC2	1.52
		B33-T0-NC3	1.75
		T0-Average	**1.89**

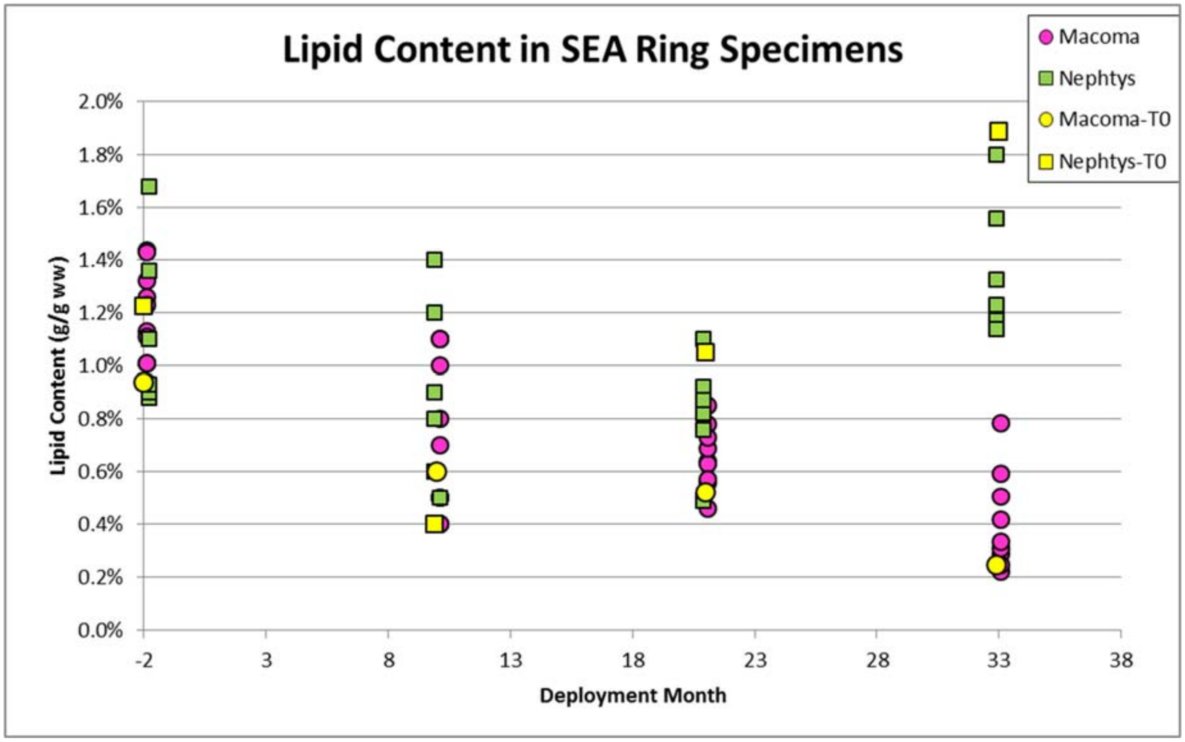

Figure 11 Lipid content in SEA ring specimens.

Attachment E-2 Time 0 Tissue and Wet Weight Basis Discussion

As part of quality assurance/quality control (QA/QC) for concentrations of PCBs, total mercury (total Hg), and methylmercury (MeHg) in tissue prior to sediment-expose was estimated with measurement of concentrations of these analytes in a subset of tissue samples that were handled, processed, and analyzed with the same as the sediment-exposed samples, except the Time 0 (T_0) tissues were not exposed to sediment. T_0 concentrations in tissue for total PCBs has been shown in Table 1.

Table 1 Concentrations of Total PCBs in Tissue at T_0

Species	Event	Sample ID	Lipids	Total PCBs	
			%, ww	ng/g, ww	ng/g, lw
Macoma nasuta	Baseline	B0 MN R1	1.04	17.38	1671
		B0 MN R2	0.84	0.14	17
		B0 MN R3	0.94	< 0.06	6.38
		T0-Average	**0.94**	5.85	**564**
	10-month	4 B12 MN TO1	0.70	3.74	534
		5 B12 MN TO2	0.50	17.45	3490
		6 B12BMN TO3	0.60	8.35	1392
		T0-Average	**0.60**	9.85	**1806**
	21-month	T0 B22 1 Mn	0.50	0.21	42
		T0 B22 2 MN	0.56	0.41	73
		T0 B22 5 Mn	0.50	< 0.06	5
		T0-Average	**0.52**	0.22	**40**
	33-month	B33-T0-MN-1	0.17	< 0.04	15
		B33-T0-MN-2	0.20	< 0.04	13
		B33-T0-MN-3	0.37	< 0.04	7
		T0-Average	**0.25**	0.02	**11**

Species	Event	Sample ID	Lipids	Total PCBs	
			%, ww	ng/g, ww	ng/g, lw
Nephtys caecoides	Baseline	B0 NC R1	1.27	< 0.34	13
		B0 NC R2	1.18	0.53	45
		B0 NC R3	1.23	0.54	44
		T0-Average	**1.23**	0.41	**34**
	10-month	1 B12 NC TO1	0.70	4.96	708
		2 B12 NC TO2	0.20	0.58	290
		3 B12 NC TO3	0.30	31.75	10583
		T0-Average	**0.40**	12.43	**3860**
	21-month	T0 B22 1 Nc	1.20	0.32	27
		T0 B22 2 Nc	1.00	0.68	68
		T0 B22 3 Nc	0.95	0.39	41
		T0-Average	**1.05**	0.46	**45**
	33-month	B33-T0-NC1	2.39	0.56	23
		B33-T0-NC2	1.52	0.38	25
		B33-T0-NC3	1.75	0.31	18
		T0-Average	**1.89**	0.42	**22**

It is notable that the T_0 concentrations of total PCBs in *M. nasuta* tissue in the baseline and 10-month event and *N. caecoides* in the 10-month event were on a similar order of magnitude (e.g., 1,000+ ng/g, lw) compared to levels measured in organisms exposed to Pier 7 sediment during the baseline event. Other concentrations in T_0 tissues were considerably lower (less than 100 ng/g, lw). However, this is generally driven by one replicate with higher concentrations.

The 2-week exposure period appeared to be a sufficient duration to allow tissue PCB concentrations to equilibrate with the monitoring event PCB exposure conditions such that the differences in T_0 concentrations among the events do not influence the overall interpretation of the baseline and post-remedy data. For example, T_0 concentrations in the thousands of ng/g, lw decreased significantly to levels in the hundreds of ng/g, lw range during 2-week exposure period in the 10-month monitoring event. Furthermore, this range of PCB concentrations was consistently observed for the organisms exposed to Pier 7 sediment during the other post-remedy monitoring events (21- and 33-month events).

Concentrations of total PCBs on a wet weight basis measured in *M. nasuta* tissues deployed in SEA Ring chambers was statistically highest during the baseline monitoring. For the baseline monitoring event, concentrations of total PCBs in *M. nasuta* tissue increased by about a factor of 1.7 on a wet weight basis

and 1.4 on a lipid weight basis above the *M. nasuta*-T_0 specimens, which verifies the deployed organisms accumulated PCBs during the 14-day exposure period. For the 10-month monitoring event, most of the deployed *M. nasuta* tissue samples had lower concentrations of total PCBs on a wet and lipid weight basis than the *M. nasuta*-T_0 specimens indicating the deployed organisms may have depurated PCBs during the deployment. For the 21- and 33-month monitoring events, concentrations of total PCBs on a wet weight and lipid weight basis measured in the deployed *M. nasuta* tissues were lower; however, concentrations were increased above *M. nasuta*-T_0 concentrations suggesting PCBs accumulation by *M. nasuta* were reduced from the baseline levels (Figure 1, Figure).

Concentrations of total PCBs on a wet weight basis measured in *N. caecoides* tissues deployed in SEA Ring chambers were statistically highest during the baseline monitoring. For the baseline monitoring event, concentrations of total PCBs in *N. caecoides* tissue were a factor of 57 higher on a wet weight basis and 62 on a lipid weight basis above the *N. caecoides*-T_0 specimens, which verifies the deployed organisms accumulated PCBs during the 14-day exposure period. For the 10-month monitoring event, most of the deployed *N. caecoides* tissue samples had lower concentrations of total PCBs on a wet and lipid weight basis than the *N. caecoides* -T_0 specimens indicating the deployed organisms may have depurated PCBs during the deployment. For the 21- and 33-month monitoring events, concentrations of total PCBs on a wet and lipid weight basis in the deployed *N. caecoides* tissues were lower; however, the concentrations were increased above the *N. caecoides* -T_0 concentrations suggesting PCBs accumulation by *N. caecoides* was much reduced from the baseline levels (Figure 1, Figure 2).

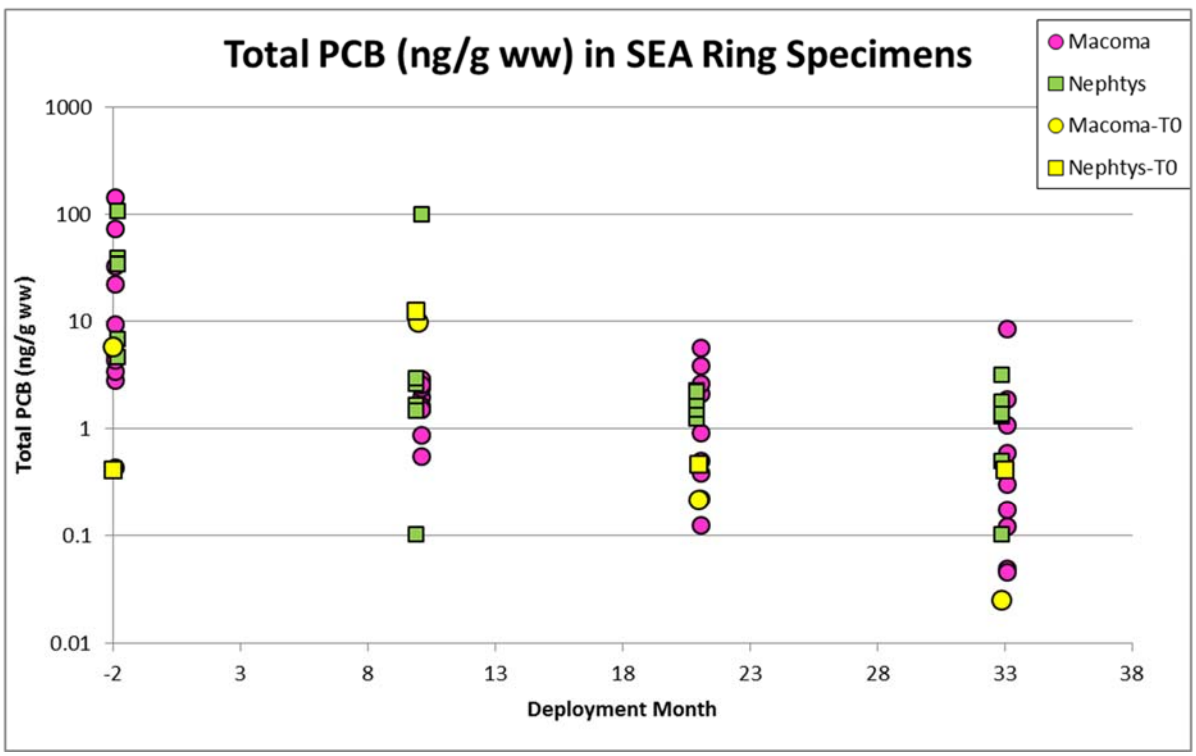

Figure 1 Total PCBs in SEA Ring specimens (ng/g, ww).

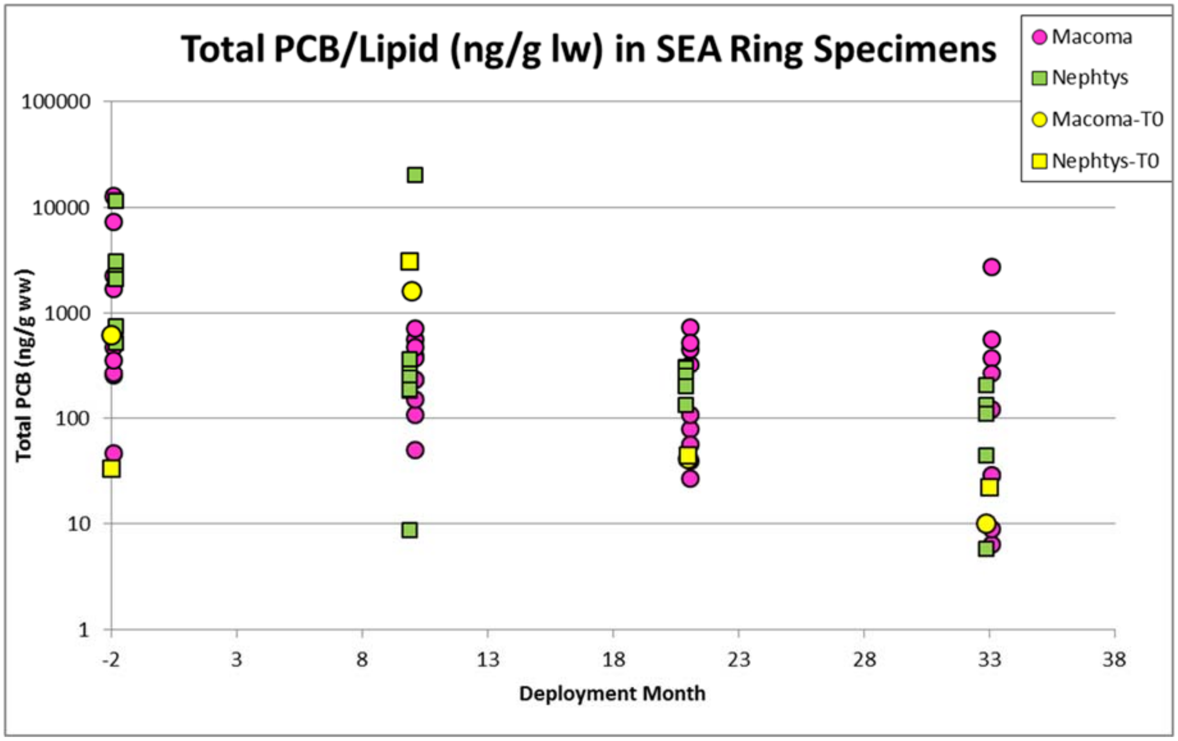

Figure 2 Total PCBs in SEA Ring specimens (ng/g, lw).

T_0 concentrations in tissue for total Hg and MeHg has been shown in Table 2.

Table 2 Concentrations of Mercury and Methylmercury in Tissue at T_0.

Species	Event	Sample ID	Total Hg ng/g, ww	Methyl Hg ng/g, ww
Macoma nasuta	Baseline	B0 MN R1	12.29	7.33
		T0-Average	**12.29**	**7.33**
	10-month	4 B12 MN TO1	16.20	7.85
		5 B12 MN TO2	15.50	7.78
		6 B12BMN TO3	16.66	6.75
		T0-Average	**16.12**	**7.46**
	21-month	T0 B22 1 Mn	11.00	3.80
		T0-Average	**11.00**	**3.80**
	33-month	B33-T0-MN-1	9.20	4.56
		B33-T0-MN-2	10.26	5.56
		B33-T0-MN-3	11.12	5.13
		T0-Average	**10.19**	**5.08**
Nephtys caecoides	Baseline	B0 NC R1	18.19	12.10
		T0-Average	**18.19**	**12.10**
	10-month	1 B12 NC TO1	28.40	5.37
		2 B12 NC TO2	38.00	3.34
		3 B12 NC TO3	24.60	4.80
		T0-Average	**30.33**	**4.50**
	21-month	T0 B22 1 Nc	2.40	3.90
		T0-Average	**2.40**	**3.90**
	33-month	B33-T0-NC1	10.34	4.84
		B33-T0-NC2	10.26	4.67
		T0-Average	**10.30**	**4.76**

Concentrations of total Hg measured in the deployed tissues were similar to the concentrations measured in the T_0 specimens (Figure 3). Concentrations of MeHg in tissue are shown in Figure 4.

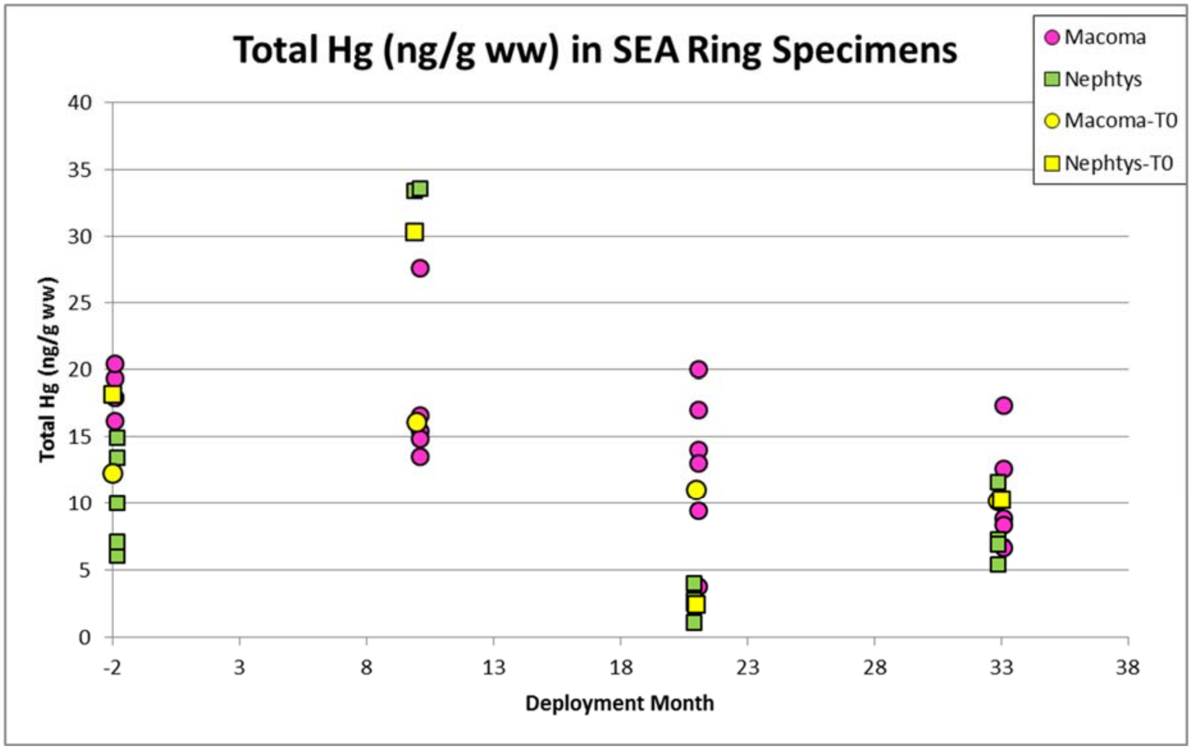

Figure 3 Concentration of total mercury in tissue (ng/g, ww).

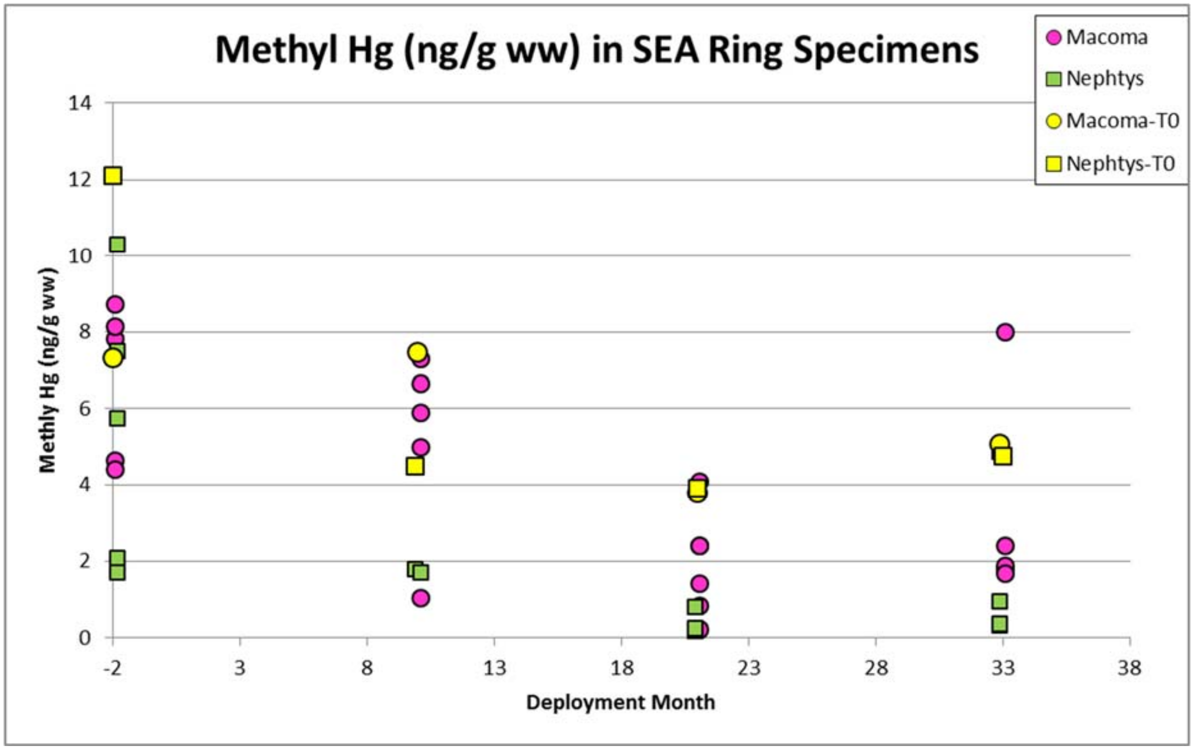

Figure 4 Concentrations of methylmercury in tissue (ng/g, ww).

APPENDIX F RESULTS AND CALCULATIONS FOR IN SITU SOLID PHASE MICROEXTRACTION

Table 1. Details for SPME Sampling Conducted during the Baseline Characterization.

SPAWAR Systems Center Pacific

San Diego, California

Sample ID	Lab ID	Station ID	Location in Relation to the Future Reactive Cap Area	Sample Type	Latitude [1]	Longitude [1]	Deployment Date	Retrieval Date	SPME Processing Date [2]	Envelope Length in Sediment (cm)	Envelope Length Out of Sediment (at top of envelope) (cm)	Total Envelope Length (cm)	SPME Fiber Length Processed (cm)	Percent Recovery (%)
B-SPME-TB1	B-SPME-TB1	NA	NA	Trip Blank	NA	NA	7/31/2012	7/31/2012	8/2/2012	NA	NA	NA	149.6	100%
B-SPME-TB2	B-SPME-TB2	NA	NA	Trip Blank	NA	NA	7/31/2012	7/31/2012	8/2/2012	NA	NA	NA	149	99%
B7-MM-Sed-SPME-SEA RING	F009	B7	Within	Sample	47.558715°	-122.628897°	8/1/2012	8/14/2012	8/20/2012				149.9	100%
B10-MM-Sed-SPME-SEA RING	F010	B10	Within	Sample	47.558660°	-122.629008°	8/1/2012	8/14/2012	8/20/2012				149.2	99%
B9-MM-Sed-SPME-SEA RING	F011	B9	Within	Sample	47.558618°	-122.628912°	8/1/2012	8/14/2012	8/20/2012				145.9	97%
B8-MM-Sed-SPME-SEA RING	F012	B8	Within	Sample	47.558690°	-122.628750°	8/1/2012	8/14/2012	8/20/2012				150.8	101%
B6-MM-Sed-SPME-SEA RING	F013	B6	Within	Sample	47.558764°	-122.628966°	8/1/2012	8/14/2012	8/20/2012				149.5	100%
B4-MM-Sed-SPME-SEA RING	F014	B4	Within	Sample	47.558842°	-122.628792°	7/31/2012	8/15/2012	8/20/2012	Not observed [3]	Not observed [3]	Not observed [3]	149.3	100%
B5-MM-Sed-SPME-SEA RING	F015	B5	Within	Sample	47.558773°	-122.629005°	7/31/2012	8/15/2012	8/20/2012				150.9	101%
B3-MM-Sed-SPME-SEA RING	F016	B3	Within	Sample	47.558861°	-122.628946°	7/31/2012	8/15/2012	8/20/2012				150.8	101%
B3-MM-DUP-Sed-SPME-SEA RING	F017	B3	Within	Duplicate	47.558861°	-122.628946°	7/31/2012	8/15/2012	8/20/2012				150	100%
B2-MM-Sed-SPME-SEA RING	F018	B2	Within	Sample	47.558861°	-122.629026°	7/31/2012	8/15/2012	8/20/2012				148.5	99%
B1-MM-Sed-SPME-SEA RING	F019	B1	Within	Sample	47.558984°	-122.628963°	7/31/2012	8/15/2012	8/20/2012				150.2	100%
B6-MM-Sed-SPME-Core	F030	B6	Within	Sample	47.558764°	-122.628966°	8/1/2012	8/14/2012	8/20/2012	12	3	15	147.9	99%
B5-MM-Sed-SPME-Core	F027	B5	Within	Sample	47.558773°	-122.629005°	7/31/2012	8/15/2012	8/20/2012	15	2	17	142.7	95%
B8-MM-Sed-SPME-Core	F029	B8	Within	Sample	47.558690°	-122.628750°	8/1/2012	8/14/2012	8/20/2012	10	3	13	126.8	85%
B2-MM-Sed-SPME-Core	F028	B2	Within	Sample	47.558861°	-122.629026°	7/31/2012	8/15/2012	8/20/2012	6	9	15	149.3	100%
B3-MM-Sed-SPME-Core	F026	B3	Within	Sample	47.558861°	-122.628946°	7/31/2012	8/15/2012	8/20/2012	6	10	16	151	101%
B1-MM-Sed-SPME-Core	F025	B1	Within	Sample	47.558984°	-122.628963°	7/31/2012	8/15/2012	8/20/2012	8	8	16	150.2	100%
B9-MM-Sed-SPME-Core	F020	B9	Within	Sample	47.558618°	-122.628912°	8/1/2012	8/14/2012	8/20/2012	17	0	17	149.7	100%
B1-MM-DUP-Sed-SPME-Core	F024	B1	Within	Duplicate	47.558984°	-122.628963°	7/31/2012	8/15/2012	8/20/2012	12	3	15	150.3	100%
B4-MM-Sed-SPME-Core	F022	B4	Within	Sample	47.558842°	-122.628792°	7/31/2012	8/15/2012	8/20/2012	4	12	16	117.8	79%
B10-MM-Sed-SPME-Core	F021	B10	Within	Sample	47.558660°	-122.629008°	8/1/2012	8/14/2012	8/20/2012	10	5	15	150.1	100%
B7-MM-Sed-SPME-Core	F023	B7	Within	Sample	47.558715°	-122.628897°	8/1/2012	8/14/2012	8/20/2012	15	1	16	150.6	100%
NA	NA	B1-RBS	Outside	NA	47.559164°	-122.629003°	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	B2-RBS	Outside	NA	47.559104°	-122.629008°	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	B3-RBS	Outside	NA	47.559102°	-122.628922°	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	B4-RBS	Outside	NA	47.559156°	-122.628704°	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 Concentrations of PCB Congeners are calculated as the corrected total mass of PCB congeners divided by the length of SPME fiber, assuming 0.06908 µL / cm_{PDMS}. This is concentration has not been corrected to steady state conditions.

2 Samples were processed at Space and Naval Warfare Systems Center Pacific (SSC Pacific) in Point Loma by Jason Conder (ENVIRON), Melissa McMeechan (ENVIRON) and Victoria Kirtay (SSC Pacific).

3 Penetration of the envelope into the sediment was not observed for SEA Ring samples because the sediment was lost upon retrieval in most samples. Therefore the amount of sediment observed covering the envelope was not likely to be the actual coverage of the envelope while deployed.

4 B1-RBS, B2-RBS, B3-RBS, and B4-RBS are the reference benthic stations. SPME passive sampling was not conducted at these stations.

5 SPME = solid phase microextraction

6 NA = not applicable

7 cm = centimeter

Table 2. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-1	2051-60-7	Mono	4.23	16,982	16,388	2.48	2,480,000	Planar	
PCB-3	2051-62-9	Mono	4.87	74,131	71,536	2.48	2,480,000	Planar	
PCB-5	16605-91-7	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-6	25569-80-6	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-7	33284-50-3	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-8	34883-43-7	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-9	34883-39-1	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-12	2974-92-7	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-13	2974-90-5	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-14	34883-41-5	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-15	2050-68-2	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-16	38444-78-9	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-17	37680-66-3	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-18	37680-65-2	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-19	38444-73-4	Tri	5.05	112,202	108,275	0.13991	139,910	Non-planar	
PCB-20	38444-84-7	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-22	38444-85-8	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-24	55702-45-9	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-25	55712-37-3	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-26	38444-81-4	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-27	38444-76-7	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-28	7012-37-5	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-29	15862-07-4	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	Performance Reference Compound [5]
PCB-31	16606-02-3	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-32	38444-77-8	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-33	38444-86-9	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-34	37680-68-5	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	Spike Recovery Standard [6]
PCB-35	37680-69-6	Tri	5.69	489,779	472,637	0.13991	139,910	Planar	
PCB-37	38444-90-5	Tri	5.69	489,779	472,637	0.13991	139,910	Planar	
PCB-40	38444-93-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-41	52663-59-9	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-42	36559-22-5	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-44	41464-39-5	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-45	70362-45-7	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-46	41464-47-5	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	

Table 2. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-47	2437-79-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-48	70362-47-9	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-49	41464-40-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-51	68194-04-7	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-52	35693-99-3	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-53	41464-41-9	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-54	15968-05-5	Tetra	5.66	457,088	441,090	0.032245	32,245	Non-planar	
PCB-56	41464-43-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-59	74472-33-6	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-60	33025-41-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-63	74472-34-7	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-64	52663-58-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-66	32598-10-0	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-67	73575-53-8	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-69	60233-24-1	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	Performance Reference Compound [5]
PCB-70	32598-11-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-71	41464-46-4	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-73	74338-23-1	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-74	32690-93-0	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-75	32598-12-2	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-77	32598-13-3	Tetra	6.10	1,258,925	1,214,863	0.032245	32,245	Planar	
PCB-81/87	70362-50-4/ 38380-02-8	Tetra/ Penta	6.18	1,513,561	1,460,587	0.019787	19,787	Planar/Non-planar	
PCB-82	52663-62-4	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-83	60145-20-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-84	52663-60-2	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-85	65510-45-4	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-87	38380-02-8	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-90	68194-07-0	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-91	68194-05-8	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-92	52663-61-3	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-93	73575-56-1	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-95	38379-99-6	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-97	41464-51-1	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-99	38380-01-7	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	

Table 2. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-100	39485-83-1	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-101	37680-73-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-103	60145-21-3	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-104	56558-16-8	Penta	6.20	1,584,893	1,529,422	0.0073282	7,328	Non-planar	Performance Reference Compound [5]
PCB-105	32598-14-4	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-107	70424-68-9	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-110	38380-03-9	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-114	74472-37-0	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-115	74472-38-1	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-117	68194-11-6	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-118	31508-00-6	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-119	56558-17-9	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-122	76842-07-4	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-123	65510-44-3	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-124	70424-70-3	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-128	38380-07-3	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-129	55215-18-4	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-130	52663-66-8	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-131	61798-70-7	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-132	38380-05-1	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-134	52704-70-8	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-135	52744-13-5	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-136	38411-22-2	Hexa	6.70	5,011,872	4,836,457	0.0016469	1,647	Non-planar	
PCB-137	35694-06-5	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-138	35065-28-2	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-141	52712-04-6	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-144	68194-14-9	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-146	51908-16-8	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-147	68194-13-8	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-149	38380-04-0	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-151	52663-63-5	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-153	35065-27-1	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-154	60145-22-4	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	Performance Reference Compound [5]
PCB-156	38380-08-4	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-157	69782-90-7	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	

Table 2. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-158	74472-42-7	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-163	74472-44-9	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-164	74472-45-0	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-165	74472-46-1	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	Spike Recovery Standard [6]
PCB-167	52663-72-6	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-170	35065-30-6	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-171	52663-71-5	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-172	52663-74-8	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-173	68194-16-1	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-174	38411-25-5	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-175	40186-70-7	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-176	52663-65-7	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-177	52663-70-4	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-178	52663-67-9	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-179	52663-64-6	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-180	35065-29-3	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-183	52663-69-1	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-185	52712-05-7	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-187	52663-68-0	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-189	39635-31-9	Hepta	7.25	17,782,794	17,160,396	0.00036674	367	Planar	
PCB-190	41411-64-7	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-191	74472-50-7	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-193	69782-91-8	Hepta	7.15	14,125,375	13,630,987	0.000366740	367	Non-planar	
PCB-194	35694-08-7	Octa	7.59	38,904,514	37,542,856	0.000081049	81	Non-planar	
PCB-195	52663-78-2	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-196	42740-50-1	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-197	33091-17-7	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-199	52663-75-9	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-200	52663-73-7	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-201	40186-71-8	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-202	2136-99-4	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-203	52663-76-0	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-205	74472-53-0	Octa	7.59	38,904,514	37,542,856	0.000081049	81	Non-planar	

Table 2. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-206	40186-72-9	Nona	7.94	87,096,359	84,047,986	0.000017797	18	Non-planar	
PCB-207	52663-79-3	Nona	8.07	117,489,755	113,377,614	0.000017797	18	Non-planar	
PCB-208	52663-77-1	Nona	8.07	117,489,755	113,377,614	0.000017797	18	Non-planar	
PCB-209	2051-24-3	Deca	8.51	323,593,657	312,267,879	0.0000038862	4	Non-planar	Spike Recovery Standard [6]

Notes:
1 Log K_{fs} = Log_{10} Fiber PDMS-Solution Partition Coefficient. Referenced from Smedes et al. 2009.
2 K_{fs} = Fiber PDMS-Solution Water Partition Coefficient
3 Converted L with the density of PDMS = 0.965 kg/L
4 S = Solubility Limit in Water. Predicted using EpiWin.
5 All SPMEs were loaded with Performance Reference Compounds (24-h tumble in 900 mL 80:20 methanol:MQ water solution (0.2 µg/mL)) prior to deployment.
6 Spike recovery standard added to 1.8-mL extracts prior to pre-concentration; used to correct for PCB loss during pre-concentration step.
7 PCB = polychlorobiphenyl
8 SPME = solid phase microextraction
9 PDMS = polydimethylsiloxane
10 L = liter
11 kg = kilogram
12 ng = nanogram
13 mg = milligram

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																										
Lab ID	**1**	**3**	**5**	**6**	**7**	**8**	**9**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**29**	**31**	**32**	**33**	**34**
F009	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**9.32**	*ND*	*ND*	*ND*	*ND*
F010	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**10.06**	*ND*	*ND*	*ND*	*ND*
F011	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**8.78**	*ND*	*ND*	*ND*	*ND*
F012	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**9.60**	*ND*	*ND*	*ND*	*ND*
F013	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**16.84**	*ND*	*ND*	*ND*	*ND*
F014	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**2.12**	*ND*	*ND*	*ND*	*ND*
F015	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**11.38**	*ND*	*ND*	*ND*	*ND*
F016	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**12.74**	*ND*	*ND*	*ND*	*ND*
F017	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**16.22**	*ND*	*ND*	*ND*	*ND*
F018	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.90**	*ND*	*ND*	*ND*	*ND*
F019	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**10.32**	*ND*	*ND*	*ND*	*ND*
F020	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**6.96**	*ND*	*ND*	*ND*	*ND*
F021	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**7.84**	*ND*	*ND*	*ND*	*ND*
F022	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**8.54**	*ND*	*ND*	*ND*	*ND*
F023	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**8.50**	*ND*	*ND*	*ND*	*ND*
F024	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**8.32**	*ND*	*ND*	*ND*	*ND*
F025	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**6.38**	*ND*	*ND*	*ND*	*ND*
F026	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**7.80**	*ND*	*ND*	*ND*	*ND*
F027	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**12.94**	*ND*	*ND*	*ND*	*ND*
F028	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**7.24**	*ND*	*ND*	*ND*	*ND*
F029	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**7.70**	*ND*	*ND*	*ND*	*ND*
F030	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**4.38**	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**4.20**	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**10.80**	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.30**	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**13.80**	*ND*	*ND*	*ND*	*ND*

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																										
Lab ID	**35**	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**	**67**	**69**	**70**	**71**	**73**	**74**
F009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.12**	ND	ND	ND	ND	ND	ND	**13.82**	ND	ND	ND	ND
F010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.11**	ND	ND	ND	ND	ND	ND	**15.48**	ND	ND	ND	ND
F011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.08**	ND	ND	ND	ND	ND	ND	**12.74**	ND	ND	ND	ND
F012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14.84**	ND	ND	ND	ND
F013	ND	ND	ND	ND	ND	**0.26**	ND	ND	ND	ND	**0.32**	ND	**0.61**	ND	ND	**0.13**	ND	ND	ND	ND	**0.44**	ND	**26.60**	**0.32**	ND	ND	ND
F014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3.22**	ND	ND	ND	ND
F015	ND	ND	ND	ND	ND	**0.09**	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND	ND	ND	**18.10**	**0.11**	ND	ND	ND
F016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.18**	ND	ND	ND	ND	**0.12**	ND	**20.80**	ND	ND	ND	ND
F017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**23.60**	ND	ND	ND	ND
F018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.88**	ND	ND	ND	ND
F019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.16**	ND	ND	ND	ND	ND	ND	**17.86**	ND	ND	ND	ND
F020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND	ND	ND	**13.96**	ND	ND	ND	ND
F021	ND	ND	ND	ND	ND	**0.06**	ND	ND	ND	ND	**0.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13.04**	ND	ND	ND	ND
F022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14.94**	ND	ND	ND	ND
F023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.16**	ND	ND	ND	ND	ND	ND	**16.00**	ND	ND	ND	ND
F024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**15.66**	ND	ND	ND	ND
F025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.17**	ND	ND	ND	ND	ND	ND	**14.66**	ND	ND	ND	ND
F026	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14.28**	ND	ND	ND	ND
F027	ND	ND	ND	ND	ND	**0.24**	ND	ND	ND	ND	**0.28**	ND	ND	ND	ND	**0.16**	ND	ND	ND	ND	ND	ND	**25.00**	ND	ND	ND	ND
F028	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**12.80**	ND	ND	ND	ND
F029	ND	ND	ND	ND	ND	**0.23**	ND	ND	ND	ND	**0.22**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13.32**	ND	ND	ND	ND
F030	ND	ND	ND	ND	ND	**0.28**	ND	ND	ND	ND	**0.38**	ND	**0.94**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.98**	**0.34**	ND	ND	ND
B-SPME-TB1 [8]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.14**	ND	ND	ND	ND
B-SPME-TB2 [8]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14.78**	ND	ND	ND	ND
B-SPME-TB1 [9]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.60**	ND	ND	ND	ND
B-SPME-TB2 [9]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**15.74**	ND	ND	ND	ND

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																										
Lab ID	75	77	81/87	82	83	84	85	87	90	91	92	93	95	97	99	100	101	103	104	105	107	110	114	115	117	118	119
F009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13	ND	ND	ND	ND	ND	ND	ND	11.80	ND	ND	ND	ND	ND	ND	ND	ND
F010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14	ND	ND	ND	ND	ND	ND	0.20	13.68	ND	ND	ND	ND	ND	ND	ND	ND
F011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	ND	ND	ND	ND	ND	ND	11.04	ND	ND	ND	ND	ND	ND	ND	ND
F012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14	ND	ND	ND	ND	ND	ND	ND	12.72	ND	ND	ND	ND	ND	ND	ND	ND
F013	ND	ND	0.23	ND	ND	0.34	ND	0.21	ND	0.12	0.23	ND	0.67	0.18	ND	ND	0.75	0.17	22.80	ND	0.45	ND	ND	ND	ND	0.34	ND
F014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.50	ND	ND	ND	ND	ND	ND	ND	ND
F015	ND	ND	0.99	ND	ND	ND	ND	ND	ND	ND	0.21	ND	0.24	0.10	ND	ND	0.34	ND	14.88	ND	ND	ND	ND	ND	ND	ND	ND
F016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.10	ND	ND	ND	ND	ND	17.48	ND	ND	ND	ND	ND	ND	ND	ND
F017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.20	ND	ND	ND	ND	ND	ND	ND	ND
F018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	8.72	ND	0.22	ND	ND	ND	ND	ND	ND
F019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.24	ND	ND	ND	ND	ND	ND	ND	15.60	ND	ND	ND	ND	ND	ND	ND	ND
F020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.92	ND	ND	ND	ND	ND	ND	ND	ND
F021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.34	ND	ND	ND	ND	ND	ND	ND	ND
F022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.56	ND	ND	ND	ND	ND	ND	ND	ND
F023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.90	ND	ND	ND	ND	ND	ND	ND	ND
F024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.94	ND	ND	ND	ND	ND	ND	ND	ND
F025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.62	ND	ND	ND	ND	ND	ND	ND	ND
F026	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.04	ND	ND	ND	ND	ND	ND	ND	ND
F027	ND	ND	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13	ND	ND	0.49	ND	22.00	ND	0.33	ND	ND	ND	ND	0.24	ND
F028	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.64	ND	ND	ND	ND	ND	ND	ND	ND
F029	ND	ND	0.24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16	0.43	ND	0.59	ND	11.32	ND	0.33	ND	ND	ND	ND	0.36	ND
F030	ND	ND	ND	ND	ND	ND	ND	0.20	ND	0.12	ND	ND	0.72	0.20	0.41	ND	0.71	ND	7.06	ND	0.27	ND	ND	ND	ND	0.35	ND
B-SPME-TB1 [8]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.76	ND	ND	ND	ND	ND	ND	ND	ND
B-SPME-TB2 [8]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.46	ND	ND	ND	ND	ND	ND	ND	ND
B-SPME-TB1 [9]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.94	ND	ND	ND	ND	ND	ND	ND	ND
B-SPME-TB2 [9]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	18.96	ND	ND	ND	ND	ND	ND	ND	ND

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																										
Lab ID	**122**	**123**	**124**	**128**	**129**	**130**	**131**	**132**	**134**	**135**	**136**	**137**	**138**	**141**	**144**	**146**	**147**	**149**	**151**	**153**	**154**	**156**	**157**	**158**	**163**	**164**	**167**
F009	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**24.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F010	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	**27.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F011	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**21.60**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F012	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**26.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F013	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.18**	*ND*	*ND*	*ND*	*ND*	**0.20**	*ND*	**0.23**	**38.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F014	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**6.32**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F015	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.22**	**30.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F016	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**35.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F017	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**34.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F018	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**18.78**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F019	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**28.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F020	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**28.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F021	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**17.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F022	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**26.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F023	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**30.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F024	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**26.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F025	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**31.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F026	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**27.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F027	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.13**	*ND*	**0.19**	**42.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F028	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**23.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F029	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.28**	*ND*	*ND*	*ND*	*ND*	**0.18**	*ND*	**0.31**	**24.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F030	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.21**	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	**0.18**	**16.46**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**9.04**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**16.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**11.27**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**21.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																										
Lab ID	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**185**	**187**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**	**202**	**203**
F009	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F010	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.19**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F011	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.14**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F012	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.17**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F013	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.32**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F014	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F015	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.26**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F016	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.31**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F017	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.27**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F018	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.14**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F019	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.22**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F020	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.23**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F021	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.13**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F022	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F023	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.24**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F024	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F025	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.25**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F026	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.25**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F027	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.32**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F028	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.18**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F029	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F030	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)				Internal Spike Standard Recovery (%)			Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																		
Lab ID	**205**	**206**	**207**	**208**	**34**	**165**	**209**	**1**	**3**	**5**	**6**	**7**	**8**	**9**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**
F009	*ND*	*ND*	*ND*	*ND*	**63**	**84**	**71**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F010	*ND*	*ND*	*ND*	*ND*	**67**	**90**	**86**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F011	*ND*	*ND*	*ND*	*ND*	**61**	**81**	**85**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F012	*ND*	*ND*	*ND*	*ND*	**65**	**91**	**75**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F013	*ND*	*ND*	*ND*	*ND*	**75**	**105**	**76**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F014	*ND*	*ND*	*ND*	*ND*	**36**	**45**	**66**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F015	*ND*	*ND*	*ND*	*ND*	**83**	**106**	**77**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F016	*ND*	*ND*	*ND*	*ND*	**73**	**96**	**83**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F017	*ND*	*ND*	*ND*	*ND*	**78**	**106**	**76**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F018	*ND*	*ND*	*ND*	*ND*	**51**	**71**	**59**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F019	*ND*	*ND*	*ND*	*ND*	**74**	**97**	**71**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F020	*ND*	*ND*	*ND*	*ND*	**74**	**82**	**69**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F021	*ND*	*ND*	*ND*	*ND*	**55**	**56**	**40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F022	*ND*	*ND*	*ND*	*ND*	**81**	**81**	**78**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F023	*ND*	*ND*	*ND*	*ND*	**77**	**84**	**70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F024	*ND*	*ND*	*ND*	*ND*	**63**	**70**	**72**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F025	*ND*	*ND*	*ND*	*ND*	**71**	**75**	**83**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F026	*ND*	*ND*	*ND*	*ND*	**58**	**64**	**73**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F027	*ND*	*ND*	*ND*	*ND*	**70**	**73**	**71**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F028	*ND*	*ND*	*ND*	*ND*	**71**	**68**	**60**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F029	*ND*	*ND*	*ND*	*ND*	**77**	**74**	**72**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F030	*ND*	*ND*	*ND*	*ND*	**44**	**42**	**35**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [8]	*ND*	*ND*	*ND*	*ND*	**34**	**34**	**42**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [8]	*ND*	*ND*	*ND*	*ND*	**38**	**32**	**43**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [9]	*ND*	*ND*	*ND*	*ND*	**33**	**34**	**67**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [9]	*ND*	*ND*	*ND*	*ND*	**42**	**44**	**70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																										
Lab ID	**26**	**27**	**28**	**29**	**31**	**32**	**33**	**34**	**35**	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**
F009	*ND*	*ND*	*ND*	**12.89**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.17**	*ND*	*ND*	*ND*
F010	*ND*	*ND*	*ND*	**12.49**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.13**	*ND*	*ND*	*ND*
F011	*ND*	*ND*	*ND*	**11.64**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*
F012	*ND*	*ND*	*ND*	**12.52**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F013	*ND*	*ND*	*ND*	**19.81**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.30**	*ND*	*ND*	*ND*	*ND*	**0.38**	*ND*	**0.72**	*ND*	*ND*	**0.15**	*ND*	*ND*	*ND*
F014	*ND*	*ND*	*ND*	**4.34**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F015	*ND*	*ND*	*ND*	**12.87**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	*ND*	*ND*
F016	*ND*	*ND*	*ND*	**15.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.22**	*ND*	*ND*	*ND*
F017	*ND*	*ND*	*ND*	**18.81**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F018	*ND*	*ND*	*ND*	**9.83**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F019	*ND*	*ND*	*ND*	**12.83**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.19**	*ND*	*ND*	*ND*
F020	*ND*	*ND*	*ND*	**9.28**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.18**	*ND*	*ND*	*ND*
F021	*ND*	*ND*	*ND*	**15.57**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	**0.31**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F022	*ND*	*ND*	*ND*	**10.70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F023	*ND*	*ND*	*ND*	**11.04**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.21**	*ND*	*ND*	*ND*
F024	*ND*	*ND*	*ND*	**12.21**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F025	*ND*	*ND*	*ND*	**8.38**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.22**	*ND*	*ND*	*ND*
F026	*ND*	*ND*	*ND*	**12.08**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F027	*ND*	*ND*	*ND*	**18.18**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.34**	*ND*	*ND*	*ND*	*ND*	**0.39**	*ND*	*ND*	*ND*	*ND*	**0.22**	*ND*	*ND*	*ND*
F028	*ND*	*ND*	*ND*	**10.96**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F029	*ND*	*ND*	*ND*	**10.38**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.31**	*ND*	*ND*	*ND*	*ND*	**0.30**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F030	*ND*	*ND*	*ND*	**10.84**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.70**	*ND*	*ND*	*ND*	*ND*	**0.93**	*ND*	**2.33**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [8]	*ND*	*ND*	*ND*	**11.51**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [8]	*ND*	*ND*	*ND*	**28.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [9]	*ND*	*ND*	*ND*	**11.87**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [9]	*ND*	*ND*	*ND*	**26.64**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																										
Lab ID	**64**	**66**	**67**	**69**	**70**	**71**	**73**	**74**	**75**	**77**	**81/87**	**82**	**83**	**84**	**85**	**87**	**90**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**101**	**103**	**104**
F009	ND	ND	ND	19.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND	ND	ND	ND	ND	ND	ND	16.32
F010	ND	ND	ND	19.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	0.25	16.99
F011	ND	ND	ND	16.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	ND	ND	ND	ND	ND	ND	ND	14.64
F012	ND	ND	ND	19.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND	ND	ND	ND	ND	ND	ND	16.59
F013	ND	0.52	ND	31.29	0.37	ND	ND	ND	ND	ND	0.27	ND	ND	0.40	ND	0.24	ND	0.14	0.27	ND	0.79	0.21	ND	ND	0.88	0.20	26.82
F014	ND	ND	ND	6.58	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.16
F015	ND	ND	ND	20.47	0.12	ND	ND	ND	ND	ND	1.12	ND	ND	ND	ND	ND	ND	ND	0.24	ND	0.27	0.12	ND	ND	0.39	ND	16.83
F016	ND	0.14	ND	24.81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12	ND	ND	ND	ND	ND	20.85
F017	ND	ND	ND	27.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	23.42
F018	ND	ND	ND	16.47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29	14.53
F019	ND	ND	ND	22.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30	ND	ND	ND	ND	ND	ND	ND	19.39
F020	ND	ND	ND	18.62	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.23
F021	ND	ND	ND	25.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	18.54
F022	ND	ND	ND	18.71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15.73
F023	ND	ND	ND	20.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	18.06
F024	ND	ND	ND	22.97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.45
F025	ND	ND	ND	19.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16.57
F026	ND	ND	ND	22.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	18.65
F027	ND	ND	ND	35.13	ND	ND	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19	ND	ND	0.69	ND	30.91
F028	ND	ND	ND	19.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16.11
F029	ND	ND	ND	17.95	ND	ND	ND	ND	ND	ND	0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21	0.58	ND	0.79	ND	15.26
F030	ND	ND	ND	19.75	0.84	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.49	ND	0.31	ND	ND	1.78	0.49	1.02	ND	1.75	ND	17.48
B-SPME-TB1 [8]	ND	ND	ND	16.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.04
B-SPME-TB2 [8]	ND	ND	ND	39.41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.56
B-SPME-TB1 [9]	ND	ND	ND	14.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.07
B-SPME-TB2 [9]	ND	ND	ND	30.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36.60

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																										
Lab ID	**105**	**107**	**110**	**114**	**115**	**117**	**118**	**119**	**122**	**123**	**124**	**128**	**129**	**130**	**131**	**132**	**134**	**135**	**136**	**137**	**138**	**141**	**144**	**146**	**147**	**149**	**151**
F009	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F010	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F011	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F012	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F013	*ND*	**0.53**	*ND*	*ND*	*ND*	*ND*	**0.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.22**	*ND*	*ND*	*ND*	*ND*	**0.23**	*ND*
F014	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F015	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F016	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F017	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F018	*ND*	**0.37**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F019	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F020	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F021	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F022	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F023	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F024	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F025	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F026	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F027	*ND*	**0.47**	*ND*	*ND*	*ND*	*ND*	**0.34**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.18**	*ND*
F028	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F029	*ND*	**0.45**	*ND*	*ND*	*ND*	*ND*	**0.48**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.38**	*ND*	*ND*	*ND*	*ND*	**0.25**	*ND*
F030	*ND*	**0.66**	*ND*	*ND*	*ND*	*ND*	**0.88**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.52**	*ND*	*ND*	*ND*	*ND*	**0.37**	*ND*
B-SPME-TB1 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																										
Lab ID	**153**	**154**	**156**	**157**	**158**	**163**	**164**	**167**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**185**	**187 [10]**	**189**	**190**	**191**	**193**	**194**
F009	ND	**33.75**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F010	**0.14**	**33.77**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F011	ND	**28.63**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F012	ND	**34.96**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F013	**0.27**	**45.65**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F014	ND	**12.92**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F015	**0.25**	**34.83**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F016	ND	**42.23**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F017	ND	**40.36**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F018	ND	**31.30**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F019	ND	**35.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F020	ND	**38.42**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F021	ND	**34.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F022	ND	**32.82**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F023	ND	**39.24**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F024	ND	**38.44**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F025	ND	**40.70**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F026	ND	**41.82**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F027	**0.27**	**59.02**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F028	ND	**36.04**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F029	**0.42**	**33.42**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
F030	**0.45**	**40.74**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
B-SPME-TB1 [8]	ND	**24.77**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
B-SPME-TB2 [8]	ND	**43.73**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
B-SPME-TB1 [9]	ND	**25.25**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND
B-SPME-TB2 [9]	ND	**40.54**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND

Table 3. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)											
	195	196	197	199	200	201	202	203	205	206	207	208
F009	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F010	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F011	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F012	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F013	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F014	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F015	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F016	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F017	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F018	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F019	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F020	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F021	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F022	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F023	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F024	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F025	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F026	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F027	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F028	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F029	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
F030	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [8]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB1 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-SPME-TB2 [9]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Notes:

1 Results from analysis by Engineer Research and Development Center (ERDC) were provided on January 10, 2013 for all station samples except F021. Results from analysis of station sample F021 and trip blank samples were provided on January 29, 2013. Trip blank samples were re-analyzed by ERDC and provided on February 8, 2013. Total mass of the PCB congener is given per fiber.

2 Masses of PCB congeners extracted from the fiber are corrected for the average percent recovery of the three internal recovery standards using the following equation:

$$\text{Corrected PCB Mass} = \frac{\text{Uncorrecte d PCB Mass}}{(\text{Average \% internal spike standard recovery} \div 100\%)}$$

3 Reporting limit is 0.2 ng (uncorrected PCB congener mass per fiber).

4 ng = nanogram

5 PCB = polychlorobiphenyl

6 SPME = solid phase microextraction

7 ND = not detected

8 Lower than expected results were observed for Performance Reference Compounds (PRCs) in sample B-SPME-TB1. PRC amounts in the TB samples should be higher than those from field samples. Both TB samples were re-analyzed for PCB congeners. These results are from the analysis dated January 29, 2013.

9 Lower than expected results were observed for Performance Reference Compounds (PRCs) in sample B-SPME-TB1. PRC amounts in the TB samples should be higher than those from field samples. Both TB samples were re-analyzed for PCB congeners. These results are from the analysis dated February 8, 2013.

10 PCB-187 not calculated (NC) because this congener may be a contaminant associated with the surrogate recovery standard added by the analytical laboratory.

Table 4. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Length Processed [1] (cm)	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																
		1	3	5	6	7	8	9	12	13	14	15	16	17	18	19	20	22
F009	149.9	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F010	149.2	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F011	145.9	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F012	150.8	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F013	149.5	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F014	149.3	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F015	150.9	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F016	150.8	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F017	150.0	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F018	148.5	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F019	150.2	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F020	149.7	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F021	150.1	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F022	117.8	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F023	150.6	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F024	150.3	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F025	150.2	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F026	151.0	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F027	142.7	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F028	149.3	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F029	126.8	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F030	147.9	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB1 [9]	149.6	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB2 [9]	149.0	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB1 [10]	149.6	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB2 [10]	149.0	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*

Table 4. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/μL $_{PDMS}$)																		
	24	25	26	27	28	29	31	32	33	34	35	37	40	41	42	44	45	46	47
F009	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.24**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F010	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.21**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F011	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.15**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F012	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.20**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F013	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.92**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.03**	< 0.02	< 0.02	< 0.02
F014	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.42**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F015	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.23**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02
F016	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.46**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.82**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F018	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.96**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F019	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.24**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.90**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F021	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.50**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02
F022	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.31**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F023	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.06**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F024	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.18**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.81**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F026	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.16**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F027	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.84**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.03**	< 0.02	< 0.02	< 0.02
F028	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.06**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F029	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.18**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.04**	< 0.02	< 0.02	< 0.02
F030	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.06**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.07**	< 0.02	< 0.02	< 0.02
B-SPME-TB1 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.11**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB2 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.80**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB1 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.15**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB2 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.59**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Table 4. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																		
	48	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**	**67**	**69**	**70**	**71**	**73**	**74**	**75**
F009	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.85**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F010	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.86**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F011	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.68**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F012	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.86**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F013	< 0.02	**0.04**	< 0.02	**0.07**	< 0.02	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	**0.05**	< 0.02	**3.03**	**0.04**	< 0.02	< 0.02	< 0.02	< 0.02
F014	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.64**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F015	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.96**	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02
F016	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	< 0.02	**2.38**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.64**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F018	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.61**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F019	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.14**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.80**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F021	< 0.02	**0.03**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.50**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F022	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.30**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F023	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.00**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F024	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.21**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.86**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F026	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.12**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F027	< 0.02	**0.04**	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.56**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F028	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.88**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F029	< 0.02	**0.03**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.05**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F030	< 0.02	**0.09**	< 0.02	**0.23**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.93**	**0.08**	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB1 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.63**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB2 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.83**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB1 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.43**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB2 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.95**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Table 4. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																		
	77	**81/87**	**82**	**83**	**84**	**85**	**87**	**90**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**101**	**103**	**104**	**105**
F009	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.58**	< 0.02
F010	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	**1.65**	< 0.02
F011	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.45**	< 0.02
F012	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.59**	< 0.02
F013	< 0.02	**0.03**	< 0.02	< 0.02	**0.04**	< 0.02	**0.02**	< 0.02	**0.01**	**0.03**	< 0.02	**0.08**	**0.02**	< 0.02	< 0.02	**0.09**	**0.02**	**2.60**	< 0.02
F014	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.69**	< 0.02
F015	< 0.02	**0.11**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	**0.03**	**0.01**	< 0.02	< 0.02	**0.04**	< 0.02	**1.61**	< 0.02
F016	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.00**	< 0.02
F017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.26**	< 0.02
F018	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.03**	**1.42**	< 0.02
F019	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.03**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.87**	< 0.02
F020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.67**	< 0.02
F021	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.79**	< 0.02
F022	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.93**	< 0.02
F023	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.74**	< 0.02
F024	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.97**	< 0.02
F025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.60**	< 0.02
F026	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.79**	< 0.02
F027	< 0.02	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	< 0.02	**0.07**	< 0.02	**3.14**	< 0.02
F028	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.56**	< 0.02
F029	< 0.02	**0.04**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	**0.07**	< 0.02	**0.09**	< 0.02	**1.74**	< 0.02
F030	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.05**	< 0.02	**0.03**	< 0.02	< 0.02	**0.17**	**0.05**	**0.10**	< 0.02	**0.17**	< 0.02	**1.71**	< 0.02
B-SPME-TB1 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.26**	< 0.02
B-SPME-TB2 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.97**	< 0.02
B-SPME-TB1 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.07**	< 0.02
B-SPME-TB2 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.56**	< 0.02

Table 4. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																		
	107	**110**	**114**	**115**	**117**	**118**	**119**	**122**	**123**	**124**	**128**	**129**	**130**	**131**	**132**	**134**	**135**	**136**	**137**
F009	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F010	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F011	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F012	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F013	**0.05**	< 0.02	< 0.02	< 0.02	< 0.02	**0.04**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F014	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F015	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F016	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F018	**0.04**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F019	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F021	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F022	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F023	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F024	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F026	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F027	**0.05**	< 0.02	< 0.02	< 0.02	< 0.02	**0.03**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F028	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F029	**0.05**	< 0.02	< 0.02	< 0.02	< 0.02	**0.06**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F030	**0.06**	< 0.02	< 0.02	< 0.02	< 0.02	**0.09**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB1 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB2 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB1 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB2 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Table 4. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/μL $_{PDMS}$)																		
	138	**141**	**144**	**146**	**147**	**149**	**151**	**153**	**154**	**156**	**157**	**158**	**163**	**164**	**167**	**170**	**171**	**172**	**173**
F009	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.26**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F010	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.01**	**3.28**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F011	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.84**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F012	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.36**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F013	**0.02**	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	**0.03**	**4.42**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F014	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**1.25**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F015	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	**3.34**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F016	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**4.05**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.89**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F018	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.05**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F019	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.38**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.71**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F021	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.29**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F022	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**4.03**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F023	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.77**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F024	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.70**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.92**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F026	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**4.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F027	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**0.02**	< 0.02	**0.03**	**5.99**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F028	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.49**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F029	**0.04**	< 0.02	< 0.02	< 0.02	< 0.02	**0.03**	< 0.02	**0.05**	**3.82**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
F030	**0.05**	< 0.02	< 0.02	< 0.02	< 0.02	**0.04**	< 0.02	**0.04**	**3.99**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB1 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.40**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB2 [9]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**4.25**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB1 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**2.44**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
B-SPME-TB2 [10]	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**3.94**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Table 4. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																		
	174	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**185**	**187 [11]**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**
F009	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F010	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F011	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F012	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F013	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F014	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F015	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F016	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F017	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F018	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F019	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F020	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F021	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F022	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F023	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F024	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F025	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F026	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F027	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F028	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F029	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F030	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB1 [9]	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB2 [9]	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB1 [10]	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB2 [10]	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*

Table 4. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)							
	200	201	202	203	205	206	207	208
F009	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F010	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F011	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F012	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F013	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F014	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F015	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F016	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F017	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F018	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F019	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F020	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F021	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F022	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F023	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F024	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F025	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F026	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F027	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F028	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F029	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
F030	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB1 [9]	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB2 [9]	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB1 [10]	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
B-SPME-TB2 [10]	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*

Notes:

1 Values from **Table 1**
2 Concentrations of PCB Congeners are calculated as the corrected total mass of PCB congeners divided by the volume of SPME fiber, assuming 0.06908 µL / cm_{PDMS}. This is concentration has not been corrected to steady state conditions.
3 SPME = solid phase microextraction
4 cm = centimeter
5 ng = nanogram
6 µL = microliter
7 PDMS = polydimethylsiloxane
8 PCB = polychlorobiphenyl
9 Lower than expected results were observed for Performance Reference Compounds (PRCs) in sample B-SPME-TB1. PRC amounts in the TB samples should be higher than those from field samples. Both TB samples were re-analyzed for PCB congeners. These results are from the analysis dated January 29, 2013.
10 Lower than expected results were observed for Performance Reference Compounds (PRCs) in sample B-SPME-TB1. PRC amounts in the TB samples should be higher than those from field samples. Both TB samples were re-analyzed for PCB congeners. These results are from the analysis dated February 8, 2013.
11 PCB-187 not calculated (NC) because this congener may be a contaminant associated with the surrogate recovery standard added by the analytical laboratory.

Table 5. Correction Factors for Performance Reference Compounds and Derivation of Regression Models to Predict Correction Factors for other PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Performance Reference Compounds in PDMS ($ng_{PCB}/\mu L_{PDMS}$) (Table 4)				Initial Correction Factors by PCB Homolog [1, 2, 3, 4]				Log_{10} Correction Factors Used for Regression				Regression Model for Log_{10} CF on K_{fs} [5]			Model-predicted CF ÷ Observed CF for PRCs					Percent of Steady State Reached [6]			
Lab ID	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	Slope	Y-intercept	r^2	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	Average	Tri	Tetra	Penta	Hexa
F009	1.24	1.85	1.58	3.26	1.86	2.19	1.93	4.90	0.27	0.34	0.29	0.69	1.12E-07	0.22	0.87	0.96	0.88	1.27	0.93	1.01	54%	46%	52%	20%
F010	1.21	1.86	1.65	3.28	1.82	2.22	2.02	5.01	0.26	0.35	0.31	0.70	1.15E-07	0.22	0.90	0.99	0.87	1.23	0.94	1.01	55%	45%	49%	20%
F011	1.15	1.68	1.45	2.84	1.75	1.98	1.80	3.27	0.24	0.30	0.26	0.51	7.12E-08	0.21	0.86	0.98	0.91	1.17	0.96	1.00	57%	51%	55%	31%
F012	1.20	1.86	1.59	3.36	1.81	2.21	1.95	5.55	0.26	0.34	0.29	0.74	1.29E-07	0.21	0.88	0.97	0.86	1.29	0.93	1.01	55%	45%	51%	18%
F013	1.92	3.03	2.60	4.42	3.48	9.41	4.90	**-12.55**	0.54	0.97	0.69		1.68E-08	0.72	0.00	1.53	0.57	1.14		1.08	29%	11%	20%	
F014	0.42	0.64	0.69	1.25	1.18	1.23	1.27	1.44	0.07	0.09	0.10	0.16	2.21E-08	0.07	0.99	1.01	0.99	1.00	1.00	1.00	84%	81%	79%	69%
F015	1.23	1.96	1.61	3.34	1.85	2.38	1.98	5.44	0.27	0.38	0.30	0.74	1.21E-07	0.23	0.85	0.99	0.83	1.30	0.93	1.01	54%	42%	51%	18%
F016	1.46	2.38	2.00	4.05	2.18	3.36	2.59	101.70	0.34	0.53	0.41	2.01	4.55E-07	0.10	0.90	0.78	0.69	2.42	0.76	1.16	46%	30%	39%	1%
F017	1.82	2.64	2.26	3.89	3.07	4.52	3.26	20.55	0.49	0.66	0.51	1.31	2.16E-07	0.40	0.85	0.95	0.74	1.65	0.86	1.05	33%	22%	31%	5%
F018	0.96	1.61	1.42	3.05	1.55	1.90	1.77	3.93	0.19	0.28	0.25	0.59	1.04E-07	0.16	0.91	1.00	0.88	1.19	0.95	1.01	64%	53%	57%	25%
F019	1.24	2.14	1.87	3.38	1.85	2.71	2.34	5.72	0.27	0.43	0.37	0.76	1.20E-07	0.27	0.87	1.08	0.80	1.20	0.96	1.01	54%	37%	43%	17%
F020	0.90	1.80	1.67	3.71	1.50	2.13	2.04	10.81	0.18	0.33	0.31	1.03	2.26E-07	0.10	0.93	0.99	0.81	1.38	0.91	1.02	67%	47%	49%	9%
F021	1.50	2.50	1.79	3.29	2.26	3.79	2.21	5.12	0.35	0.58	0.35	0.71	7.43E-08	0.38	0.47	1.11	0.70	1.41	0.92	1.03	44%	26%	45%	20%
F022	1.31	2.30	1.93	4.03	1.95	3.11	2.45	67.26	0.29	0.49	0.39	1.83	4.15E-07	0.09	0.90	0.84	0.69	2.18	0.79	1.12	51%	32%	41%	1%
F023	1.06	2.00	1.74	3.77	1.65	2.44	2.14	12.71	0.22	0.39	0.33	1.10	2.33E-07	0.14	0.91	0.98	0.78	1.47	0.90	1.03	61%	41%	47%	8%
F024	1.18	2.21	1.97	3.70	1.77	2.88	2.52	10.45	0.25	0.46	0.40	1.02	1.94E-07	0.23	0.91	1.08	0.76	1.32	0.93	1.02	56%	35%	40%	10%
F025	0.81	1.86	1.60	3.92	1.43	2.21	1.96	23.92	0.15	0.34	0.29	1.38	3.27E-07	0.02	0.92	0.92	0.74	1.71	0.85	1.06	70%	45%	51%	4%
F026	1.16	2.12	1.79	4.01	1.75	2.67	2.21	48.24	0.24	0.43	0.34	1.68	3.90E-07	0.06	0.91	0.85	0.72	2.04	0.81	1.10	57%	37%	45%	2%
F027	1.84	3.56	3.14	5.99	3.17	**-19.61**	25.77	**-2.16**	0.50		1.41		7.35E-07	0.29	1.00	1.00		1.00		1.00	32%		4%	
F028	1.06	1.88	1.56	3.49	1.65	2.24	1.92	6.83	0.22	0.35	0.28	0.83	1.60E-07	0.17	0.89	0.99	0.81	1.35	0.92	1.02	61%	45%	52%	15%
F029	1.18	2.05	1.74	3.82	1.79	2.53	2.15	14.72	0.25	0.40	0.33	1.17	2.44E-07	0.15	0.90	0.94	0.78	1.56	0.88	1.04	56%	40%	47%	7%
F030	1.06	1.93	1.71	3.99	1.65	2.33	2.10	38.61	0.22	0.37	0.32	1.59	3.74E-07	0.03	0.92	0.84	0.76	1.91	0.82	1.08	61%	43%	48%	3%
B-SPME-TB2 [12]	2.80	3.83	2.97	4.25																				
B-SPME-TB2 [13]	2.59	2.95	3.56	3.94																				
Average of B-SPME-TB2 Results	2.69	3.39	3.26	4.09																				

Notes:

1
$$CF = \frac{1}{\left(\frac{[PDMS_{t=0}] - [PDMS_{t=14}]}{[PDMS_{t=0}]}\right)}$$

2 $[PDMS]_{t=0}$ is the average concentration of PRCs in B-SPME-TB2. B-SPME-TB1 values were lower than expected, treated as an outlier, and were excluded from this analysis.

3 $[PDMS]_{t=14}$ is the concentration of the PRC after 14 days in the sediment.

4 Yellow highlighted cells (negative CF values) were considered outliers because their concentrations were higher than values in the Trip Blank (TB) samples. These values were excluded from further calculations.

5 A linear regression model was developed from the observed relationship between Log_{10} of the Correction Factor and the fiber: water partition coefficient (K_{fs}, Table 2) for the four PRCs. Cells highlighted in red indicated a poor relationship.

6 Calculated by Observed CF^{-1}

7 CF = correction factor

8 PCB = polychlorobiphenyl

9 PDMS = polydimethylsiloxane

10 ng = nanogram

11 µL = microliter

12 Lower than expected results were observed for Performance Reference Compounds (PRCs) in sample B-SPME-TB1. PRC amounts in the TB samples should be higher than those from field samples. Both TB samples were re-analyzed for PCB congeners. These results are from the analysis dated January 29, 2013.

13 Lower than expected results were observed for Performance Reference Compounds (PRCs) in sample B-SPME-TB1. PRC amounts in the TB samples should be higher than those from field samples. Both TB samples were re-analyzed for PCB congeners. These results are from the analysis dated February 8, 2013.

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Regression Model (Table 5)		Model-predicted Correction Factors [4]													
			1	3	5	6	7	8	9	12	13	14	15	16	17	18
Homolog			Mono	Mono	Di	Di	Di	Di	Di	Di	Di	Di	Di	Tri	Tri	Tri
K_{fs} (L/L_{PDMS}) [1]	Slope	Y-intercept	16,388	71,536	88,009	88,009	88,009	88,009	88,009	183,877	183,877	183,877	183,877	179,691	179,691	179,691
F009	1.12E-07	0.22	1.67	1.69	1.7	1.7	1.7	1.7	1.7	1.74	1.74	1.74	1.74	1.74	1.74	1.74
F010	1.15E-07	0.22	1.67	1.69	1.7	1.7	1.7	1.7	1.7	1.74	1.74	1.74	1.74	1.74	1.74	1.74
F011	7.12E-08	0.21	1.64	1.66	1.66	1.66	1.66	1.66	1.66	1.69	1.69	1.69	1.69	1.69	1.69	1.69
F012	1.29E-07	0.21	1.61	1.64	1.65	1.65	1.65	1.65	1.65	1.69	1.69	1.69	1.69	1.69	1.69	1.69
F013	1.68E-08	0.72	5.27	5.28	5.28	5.28	5.28	5.28	5.28	5.3	5.3	5.3	5.3	5.3	5.3	5.3
F014	2.21E-08	0.07	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.19	1.19	1.19	1.19	1.19	1.19	1.19
F015	1.21E-07	0.23	1.69	1.72	1.73	1.73	1.73	1.73	1.73	1.78	1.78	1.78	1.78	1.77	1.77	1.77
F016	4.55E-07	0.10	1.28	1.36	1.38	1.38	1.38	1.38	1.38	1.53	1.53	1.53	1.53	1.52	1.52	1.52
F017	2.16E-07	0.40	2.53	2.6	2.62	2.62	2.62	2.62	2.62	2.75	2.75	2.75	2.75	2.75	2.75	2.75
F018	1.04E-07	0.16	1.46	1.48	1.48	1.48	1.48	1.48	1.48	1.52	1.52	1.52	1.52	1.52	1.52	1.52
F019	1.20E-07	0.27	1.86	1.89	1.9	1.9	1.9	1.9	1.9	1.95	1.95	1.95	1.95	1.94	1.94	1.94
F020	2.26E-07	0.10	1.28	1.32	1.33	1.33	1.33	1.33	1.33	1.4	1.4	1.4	1.4	1.4	1.4	1.4
F021	7.43E-08	0.38	2.4	2.42	2.43	2.43	2.43	2.43	2.43	2.47	2.47	2.47	2.47	2.47	2.47	2.47
F022	4.15E-07	0.09	1.26	1.33	1.35	1.35	1.35	1.35	1.35	1.48	1.48	1.48	1.48	1.47	1.47	1.47
F023	2.33E-07	0.14	1.4	1.44	1.45	1.45	1.45	1.45	1.45	1.53	1.53	1.53	1.53	1.52	1.52	1.52
F024	1.94E-07	0.23	1.69	1.73	1.75	1.75	1.75	1.75	1.75	1.82	1.82	1.82	1.82	1.82	1.82	1.82
F025	3.27E-07	0.02	1.07	1.12	1.13	1.13	1.13	1.13	1.13	1.22	1.22	1.22	1.22	1.21	1.21	1.21
F026	3.90E-07	0.06	1.16	1.22	1.24	1.24	1.24	1.24	1.24	1.35	1.35	1.35	1.35	1.34	1.34	1.34
F027	7.35E-07	0.29	1.99	2.19	2.25	2.25	2.25	2.25	2.25	2.65	2.65	2.65	2.65	2.63	2.63	2.63
F028	1.60E-07	0.17	1.48	1.51	1.52	1.52	1.52	1.52	1.52	1.58	1.58	1.58	1.58	1.57	1.57	1.57
F029	2.44E-07	0.15	1.43	1.48	1.49	1.49	1.49	1.49	1.49	1.58	1.58	1.58	1.58	1.57	1.57	1.57
F030	3.74E-07	0.03	1.09	1.14	1.16	1.16	1.16	1.16	1.16	1.26	1.26	1.26	1.26	1.26	1.26	1.26

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]														
Lab ID	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**31**	**32**	**33**	**34**	**35**	**37**	**40**
Homolog	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**108,275**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**472,637**	**472,637**	**581,470**
F009	1.71	1.79	1.79	1.74	1.79	1.79	1.74	1.79	1.79	1.74	1.79	1.79	1.87	1.87	1.93
F010	1.71	1.79	1.79	1.74	1.79	1.79	1.74	1.79	1.79	1.74	1.79	1.79	1.88	1.88	1.94
F011	1.67	1.72	1.72	1.69	1.72	1.72	1.69	1.72	1.72	1.69	1.72	1.72	1.77	1.77	1.8
F012	1.66	1.75	1.75	1.69	1.75	1.75	1.69	1.75	1.75	1.69	1.75	1.75	1.85	1.85	1.91
F013	5.29	5.33	5.33	5.3	5.33	5.33	5.3	5.33	5.33	5.3	5.33	5.33	5.36	5.36	5.39
F014	1.19	1.2	1.2	1.19	1.2	1.2	1.19	1.2	1.2	1.19	1.2	1.2	1.21	1.21	1.21
F015	1.74	1.83	1.83	1.77	1.83	1.83	1.77	1.83	1.83	1.77	1.83	1.83	1.92	1.92	1.98
F016	1.41	1.71	1.71	1.52	1.71	1.71	1.52	1.71	1.71	1.52	1.71	1.71	2.07	2.07	2.32
F017	2.65	2.9	2.9	2.75	2.9	2.9	2.75	2.9	2.9	2.75	2.9	2.9	3.18	3.18	3.35
F018	1.49	1.56	1.56	1.52	1.56	1.56	1.52	1.56	1.56	1.52	1.56	1.56	1.63	1.63	1.67
F019	1.91	2	2	1.94	2	2	1.94	2	2	1.94	2	2	2.11	2.11	2.17
F020	1.34	1.48	1.48	1.4	1.48	1.48	1.4	1.48	1.48	1.4	1.48	1.48	1.63	1.63	1.72
F021	2.44	2.52	2.52	2.47	2.52	2.52	2.47	2.52	2.52	2.47	2.52	2.52	2.6	2.6	2.64
F022	1.37	1.64	1.64	1.47	1.64	1.64	1.47	1.64	1.64	1.47	1.64	1.64	1.94	1.94	2.16
F023	1.47	1.62	1.62	1.52	1.62	1.62	1.52	1.62	1.62	1.52	1.62	1.62	1.78	1.78	1.89
F024	1.76	1.91	1.91	1.82	1.91	1.91	1.82	1.91	1.91	1.82	1.91	1.91	2.07	2.07	2.18
F025	1.15	1.32	1.32	1.21	1.32	1.32	1.21	1.32	1.32	1.21	1.32	1.32	1.51	1.51	1.64
F026	1.26	1.48	1.48	1.34	1.48	1.48	1.34	1.48	1.48	1.34	1.48	1.48	1.74	1.74	1.92
F027	2.33	3.17	3.17	2.63	3.17	3.17	2.63	3.17	3.17	2.63	3.17	3.17	4.31	4.31	5.18
F028	1.53	1.64	1.64	1.57	1.64	1.64	1.57	1.64	1.64	1.57	1.64	1.64	1.75	1.75	1.83
F029	1.51	1.67	1.67	1.57	1.67	1.67	1.57	1.67	1.67	1.57	1.67	1.67	1.85	1.85	1.97
F030	1.18	1.38	1.38	1.26	1.38	1.38	1.26	1.38	1.38	1.26	1.38	1.38	1.62	1.62	1.77

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]														
Lab ID	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**581,470**	**581,470**	**581,470**	**402,279**	**402,279**	**581,470**	**581,470**	**581,470**	**402,279**	**581,470**	**402,279**	**441,090**	**840,480**	**581,470**	**840,480**
F009	1.93	1.93	1.93	1.84	1.84	1.93	1.93	1.93	1.84	1.93	1.84	1.86	2.06	1.93	2.06
F010	1.94	1.94	1.94	1.85	1.85	1.94	1.94	1.94	1.85	1.94	1.85	1.87	2.08	1.94	2.08
F011	1.8	1.8	1.8	1.75	1.75	1.8	1.8	1.8	1.75	1.8	1.75	1.76	1.88	1.8	1.88
F012	1.91	1.91	1.91	1.81	1.81	1.91	1.91	1.91	1.81	1.91	1.81	1.83	2.06	1.91	2.06
F013	5.39	5.39	5.39	5.35	5.35	5.39	5.39	5.39	5.35	5.39	5.35	5.36	5.44	5.39	5.44
F014	1.21	1.21	1.21	1.2	1.2	1.21	1.21	1.21	1.2	1.21	1.2	1.21	1.23	1.21	1.23
F015	1.98	1.98	1.98	1.89	1.89	1.98	1.98	1.98	1.89	1.98	1.89	1.91	2.13	1.98	2.13
F016	2.32	2.32	2.32	1.92	1.92	2.32	2.32	2.32	1.92	2.32	1.92	2	3.04	2.32	3.04
F017	3.35	3.35	3.35	3.07	3.07	3.35	3.35	3.35	3.07	3.35	3.07	3.13	3.81	3.35	3.81
F018	1.67	1.67	1.67	1.6	1.6	1.67	1.67	1.67	1.6	1.67	1.6	1.62	1.78	1.67	1.78
F019	2.17	2.17	2.17	2.07	2.07	2.17	2.17	2.17	2.07	2.17	2.07	2.09	2.33	2.17	2.33
F020	1.72	1.72	1.72	1.57	1.57	1.72	1.72	1.72	1.57	1.72	1.57	1.6	1.97	1.72	1.97
F021	2.64	2.64	2.64	2.56	2.56	2.64	2.64	2.64	2.56	2.64	2.56	2.58	2.76	2.64	2.76
F022	2.16	2.16	2.16	1.82	1.82	2.16	2.16	2.16	1.82	2.16	1.82	1.89	2.76	2.16	2.76
F023	1.89	1.89	1.89	1.72	1.72	1.89	1.89	1.89	1.72	1.89	1.72	1.75	2.17	1.89	2.17
F024	2.18	2.18	2.18	2.01	2.01	2.18	2.18	2.18	2.01	2.18	2.01	2.04	2.44	2.18	2.44
F025	1.64	1.64	1.64	1.43	1.43	1.64	1.64	1.64	1.43	1.64	1.43	1.48	1.99	1.64	1.99
F026	1.92	1.92	1.92	1.64	1.64	1.92	1.92	1.92	1.64	1.92	1.64	1.7	2.43	1.92	2.43
F027	5.18	5.18	5.18	3.83	3.83	5.18	5.18	5.18	3.83	5.18	3.83	4.09	8.03	5.18	8.03
F028	1.83	1.83	1.83	1.71	1.71	1.83	1.83	1.83	1.71	1.83	1.71	1.73	2.01	1.83	2.01
F029	1.97	1.97	1.97	1.78	1.78	1.97	1.97	1.97	1.78	1.97	1.78	1.82	2.28	1.97	2.28
F030	1.77	1.77	1.77	1.52	1.52	1.77	1.77	1.77	1.52	1.77	1.52	1.57	2.22	1.77	2.22

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]													
Lab ID	**63**	**64**	**66**	**67**	**70**	**71**	**73**	**74**	**75**	**77**	**81/87**	**82**	**83**	**84**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra/Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**840,480**	**581,470**	**840,480**	**840,480**	**840,480**	**581,470**	**581,470**	**840,480**	**581,470**	**1,214,863**	**1,460,587**	**1,756,011**	**1,756,011**	**1,301,749**
F009	2.06	1.93	2.06	2.06	2.06	1.93	1.93	2.06	1.93	2.27	2.42	2.61	2.61	2.32
F010	2.08	1.94	2.08	2.08	2.08	1.94	1.94	2.08	1.94	2.29	2.45	2.65	2.65	2.35
F011	1.88	1.8	1.88	1.88	1.88	1.8	1.8	1.88	1.8	2	2.08	2.19	2.19	2.03
F012	2.06	1.91	2.06	2.06	2.06	1.91	1.91	2.06	1.91	2.3	2.47	2.7	2.7	2.36
F013	5.44	5.39	5.44	5.44	5.44	5.39	5.39	5.44	5.39	5.52	5.57	5.64	5.64	5.54
F014	1.23	1.21	1.23	1.23	1.23	1.21	1.21	1.23	1.21	1.25	1.27	1.29	1.29	1.26
F015	2.13	1.98	2.13	2.13	2.13	1.98	1.98	2.13	1.98	2.37	2.53	2.75	2.75	2.42
F016	3.04	2.32	3.04	3.04	3.04	2.32	2.32	3.04	2.32	4.5	5.83	7.94	7.94	4.93
F017	3.81	3.35	3.81	3.81	3.81	3.35	3.35	3.81	3.35	4.6	5.19	6.02	6.02	4.8
F018	1.78	1.67	1.78	1.78	1.78	1.67	1.67	1.78	1.67	1.95	2.06	2.22	2.22	1.99
F019	2.33	2.17	2.33	2.33	2.33	2.17	2.17	2.33	2.17	2.58	2.77	3	3	2.65
F020	1.97	1.72	1.97	1.97	1.97	1.72	1.72	1.97	1.72	2.39	2.72	3.17	3.17	2.5
F021	2.76	2.64	2.76	2.76	2.76	2.64	2.64	2.76	2.64	2.95	3.07	3.23	3.23	2.99
F022	2.76	2.16	2.76	2.76	2.76	2.16	2.16	2.76	2.16	3.96	5	6.64	6.64	4.3
F023	2.17	1.89	2.17	2.17	2.17	1.89	1.89	2.17	1.89	2.65	3.03	3.55	3.55	2.78
F024	2.44	2.18	2.44	2.44	2.44	2.18	2.18	2.44	2.18	2.89	3.22	3.68	3.68	3
F025	1.99	1.64	1.99	1.99	1.99	1.64	1.64	1.99	1.64	2.64	3.18	3.97	3.97	2.82
F026	2.43	1.92	2.43	2.43	2.43	1.92	1.92	2.43	1.92	3.4	4.23	5.52	5.52	3.67
F027	8.03	5.18	8.03	8.03	8.03	5.18	5.18	8.03	5.18	15.1	22.9	37.8	37.8	17.5
F028	2.01	1.83	2.01	2.01	2.01	1.83	1.83	2.01	1.83	2.3	2.52	2.81	2.81	2.38
F029	2.28	1.97	2.28	2.28	2.28	1.97	1.97	2.28	1.97	2.81	3.23	3.81	3.81	2.95
F030	2.22	1.77	2.22	2.22	2.22	1.77	1.77	2.22	1.77	3.06	3.78	4.87	4.87	3.3

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]														
Lab ID	**85**	**87**	**90**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**101**	**103**	**105**	**107**	**110**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**1,301,749**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**2,368,794**	**2,368,794**	**1,756,011**
F009	2.61	2.61	2.61	2.32	2.61	2.32	2.32	2.61	2.61	2.32	2.61	2.32	3.05	3.05	2.61
F010	2.65	2.65	2.65	2.35	2.65	2.35	2.35	2.65	2.65	2.35	2.65	2.35	3.12	3.12	2.65
F011	2.19	2.19	2.19	2.03	2.19	2.03	2.03	2.19	2.19	2.03	2.19	2.03	2.42	2.42	2.19
F012	2.7	2.7	2.7	2.36	2.7	2.36	2.36	2.7	2.7	2.36	2.7	2.36	3.24	3.24	2.7
F013	5.64	5.64	5.64	5.54	5.64	5.54	5.54	5.64	5.64	5.54	5.64	5.54	5.77	5.77	5.64
F014	1.29	1.29	1.29	1.26	1.29	1.26	1.26	1.29	1.29	1.26	1.29	1.26	1.33	1.33	1.29
F015	2.75	2.75	2.75	2.42	2.75	2.42	2.42	2.75	2.75	2.42	2.75	2.42	3.26	3.26	2.75
F016	7.94	7.94	7.94	4.93	7.94	4.93	4.93	7.94	7.94	4.93	7.94	4.93	15.1	15.1	7.94
F017	6.02	6.02	6.02	4.8	6.02	4.8	4.8	6.02	6.02	4.8	6.02	4.8	8.16	8.16	6.02
F018	2.22	2.22	2.22	1.99	2.22	1.99	1.99	2.22	2.22	1.99	2.22	1.99	2.57	2.57	2.22
F019	3	3	3	2.65	3	2.65	2.65	3	3	2.65	3	2.65	3.55	3.55	3
F020	3.17	3.17	3.17	2.5	3.17	2.5	2.5	3.17	3.17	2.5	3.17	2.5	4.37	4.37	3.17
F021	3.23	3.23	3.23	2.99	3.23	2.99	2.99	3.23	3.23	2.99	3.23	2.99	3.59	3.59	3.23
F022	6.64	6.64	6.64	4.3	6.64	4.3	4.3	6.64	6.64	4.3	6.64	4.3	11.9	11.9	6.64
F023	3.55	3.55	3.55	2.78	3.55	2.78	2.78	3.55	3.55	2.78	3.55	2.78	4.92	4.92	3.55
F024	3.68	3.68	3.68	3	3.68	3	3	3.68	3.68	3	3.68	3	4.84	4.84	3.68
F025	3.97	3.97	3.97	2.82	3.97	2.82	2.82	3.97	3.97	2.82	3.97	2.82	6.3	6.3	3.97
F026	5.52	5.52	5.52	3.67	5.52	3.67	3.67	5.52	5.52	3.67	5.52	3.67	9.57	9.57	5.52
F027	37.8	37.8	37.8	17.5	37.8	17.5	17.5	37.8	37.8	17.5	37.8	17.5	> 100	> 100	37.8
F028	2.81	2.81	2.81	2.38	2.81	2.38	2.38	2.81	2.81	2.38	2.81	2.38	3.53	3.53	2.81
F029	3.81	3.81	3.81	2.95	3.81	2.95	2.95	3.81	3.81	2.95	3.81	2.95	5.37	5.37	3.81
F030	4.87	4.87	4.87	3.3	4.87	3.3	3.3	4.87	4.87	3.3	4.87	3.3	8.26	8.26	4.87

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]														
Lab ID	**114**	**115**	**117**	**118**	**119**	**122**	**123**	**124**	**128**	**129**	**130**	**131**	**132**	**134**	**135**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**2,368,794**	**1,756,011**	**1,756,011**	**2,368,794**	**1,756,011**	**2,368,794**	**2,368,794**	**2,368,794**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**3,931,220**
F009	3.05	2.61	2.61	3.05	2.61	3.05	3.05	3.05	5.94	5.94	5.94	4.57	4.57	4.57	4.57
F010	3.12	2.65	2.65	3.12	2.65	3.12	3.12	3.12	6.18	6.18	6.18	4.72	4.72	4.72	4.72
F011	2.42	2.19	2.19	2.42	2.19	2.42	2.42	2.42	3.69	3.69	3.69	3.12	3.12	3.12	3.12
F012	3.24	2.7	2.7	3.24	2.7	3.24	3.24	3.24	6.95	6.95	6.95	5.14	5.14	5.14	5.14
F013	5.77	5.64	5.64	5.77	5.64	5.77	5.77	5.77	6.38	6.38	6.38	6.13	6.13	6.13	6.13
F014	1.33	1.29	1.29	1.33	1.29	1.33	1.33	1.33	1.52	1.52	1.52	1.44	1.44	1.44	1.44
F015	3.26	2.75	2.75	3.26	2.75	3.26	3.26	3.26	6.69	6.69	6.69	5.04	5.04	5.04	5.04
F016	15.1	7.94	7.94	15.1	7.94	15.1	15.1	15.1	> 100	> 100	> 100	77.5	77.5	77.5	77.5
F017	8.16	6.02	6.02	8.16	6.02	8.16	8.16	8.16	29.5	29.5	29.5	17.7	17.7	17.7	17.7
F018	2.57	2.22	2.22	2.57	2.22	2.57	2.57	2.57	4.78	4.78	4.78	3.74	3.74	3.74	3.74
F019	3.55	3	3	3.55	3	3.55	3.55	3.55	7.23	7.23	7.23	5.46	5.46	5.46	5.46
F020	4.37	3.17	3.17	4.37	3.17	4.37	4.37	4.37	16.7	16.7	16.7	9.85	9.85	9.85	9.85
F021	3.59	3.23	3.23	3.59	3.23	3.59	3.59	3.59	5.58	5.58	5.58	4.69	4.69	4.69	4.69
F022	11.9	6.64	6.64	11.9	6.64	11.9	11.9	11.9	> 100	> 100	> 100	53.1	53.1	53.1	53.1
F023	4.92	3.55	3.55	4.92	3.55	4.92	4.92	4.92	19.6	19.6	19.6	11.4	11.4	11.4	11.4
F024	4.84	3.68	3.68	4.84	3.68	4.84	4.84	4.84	15.3	15.3	15.3	9.72	9.72	9.72	9.72
F025	6.3	3.97	3.97	6.3	3.97	6.3	6.3	6.3	43.9	43.9	43.9	20.4	20.4	20.4	20.4
F026	9.57	5.52	5.52	9.57	5.52	9.57	9.57	9.57	96.9	96.9	96.9	38.9	38.9	38.9	38.9
F027	> 100	37.8	37.8	> 100	37.8	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F028	3.53	2.81	2.81	3.53	2.81	3.53	3.53	3.53	9.13	9.13	9.13	6.27	6.27	6.27	6.27
F029	5.37	3.81	3.81	5.37	3.81	5.37	5.37	5.37	22.8	22.8	22.8	12.9	12.9	12.9	12.9
F030	8.26	4.87	4.87	8.26	4.87	8.26	8.26	8.26	76	76	76	31.7	31.7	31.7	31.7

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]														
Lab ID	**136**	**137**	**138**	**141**	**144**	**146**	**147**	**149**	**151**	**153**	**156**	**157**	**158**	**163**	**164**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**4,836,457**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**4,949,112**	**6,375,692**	**6,375,692**	**4,949,112**	**4,949,112**	**4,949,112**
F009	5.77	5.94	5.94	5.94	4.57	5.94	4.57	4.57	4.57	5.94	8.57	8.57	5.94	5.94	5.94
F010	6	6.18	6.18	6.18	4.72	6.18	4.72	4.72	4.72	6.18	9.03	9.03	6.18	6.18	6.18
F011	3.62	3.69	3.69	3.69	3.12	3.69	3.12	3.12	3.12	3.69	4.66	4.66	3.69	3.69	3.69
F012	6.73	6.95	6.95	6.95	5.14	6.95	5.14	5.14	5.14	6.95	10.6	10.6	6.95	6.95	6.95
F013	6.35	6.38	6.38	6.38	6.13	6.38	6.13	6.13	6.13	6.38	6.74	6.74	6.38	6.38	6.38
F014	1.51	1.52	1.52	1.52	1.44	1.52	1.44	1.44	1.44	1.52	1.63	1.63	1.52	1.52	1.52
F015	6.49	6.69	6.69	6.69	5.04	6.69	5.04	5.04	5.04	6.69	9.96	9.96	6.69	6.69	6.69
F016	> 100	> 100	> 100	> 100	77.5	> 100	77.5	77.5	77.5	> 100	> 100	> 100	> 100	> 100	> 100
F017	27.8	29.5	29.5	29.5	17.7	29.5	17.7	17.7	17.7	29.5	59.9	59.9	29.5	29.5	29.5
F018	4.65	4.78	4.78	4.78	3.74	4.78	3.74	3.74	3.74	4.78	6.74	6.74	4.78	4.78	4.78
F019	7.01	7.23	7.23	7.23	5.46	7.23	5.46	5.46	5.46	7.23	10.7	10.7	7.23	7.23	7.23
F020	15.8	16.7	16.7	16.7	9.85	16.7	9.85	9.85	9.85	16.7	35.2	35.2	16.7	16.7	16.7
F021	5.47	5.58	5.58	5.58	4.69	5.58	4.69	4.69	4.69	5.58	7.12	7.12	5.58	5.58	5.58
F022	> 100	> 100	> 100	> 100	53.1	> 100	53.1	53.1	53.1	> 100	> 100	> 100	> 100	> 100	> 100
F023	18.5	19.6	19.6	19.6	11.4	19.6	11.4	11.4	11.4	19.6	42.2	42.2	19.6	19.6	19.6
F024	14.6	15.3	15.3	15.3	9.72	15.3	9.72	9.72	9.72	15.3	29	29	15.3	15.3	15.3
F025	40.3	43.9	43.9	43.9	20.4	43.9	20.4	20.4	20.4	43.9	> 100	> 100	43.9	43.9	43.9
F026	87.6	96.9	96.9	96.9	38.9	96.9	38.9	38.9	38.9	96.9	> 100	> 100	96.9	96.9	96.9
F027	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F028	8.76	9.13	9.13	9.13	6.27	9.13	6.27	6.27	6.27	9.13	15.4	15.4	9.13	9.13	9.13
F029	21.4	22.8	22.8	22.8	12.9	22.8	12.9	12.9	12.9	22.8	50.9	50.9	22.8	22.8	22.8
F030	69	76	76	76	31.7	76	31.7	31.7	31.7	76	> 100	> 100	76	76	76

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]												
Lab ID	**167**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**
Homolog	**Hexa**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**6,375,692**	**13,630,987**	**11,079,682**	**13,630,987**	**11,079,682**	**11,079,682**	**11,079,682**	**14,273,396**	**11,079,682**	**11,079,682**	**14,273,396**	**13,630,987**	**11,079,682**
F009	8.57	55.5	28.8	55.5	28.8	28.8	28.8	65.5	28.8	28.8	65.5	55.5	28.8
F010	9.03	61.9	31.5	61.9	31.5	31.5	31.5	73.5	31.5	31.5	73.5	61.9	31.5
F011	4.66	15.3	10.1	15.3	10.1	10.1	10.1	17	10.1	10.1	17	15.3	10.1
F012	10.6	91.1	42.8	91.1	42.8	42.8	42.8	> 100	42.8	42.8	> 100	91.1	42.8
F013	6.74	8.93	8.09	8.93	8.09	8.09	8.09	9.16	8.09	8.09	9.16	8.93	8.09
F014	1.63	2.36	2.07	2.36	2.07	2.07	2.07	2.44	2.07	2.07	2.44	2.36	2.07
F015	9.96	75.1	36.9	75.1	36.9	36.9	36.9	89.8	36.9	36.9	89.8	75.1	36.9
F016	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F017	59.9	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F018	6.74	38.6	20.9	38.6	20.9	20.9	20.9	45	20.9	20.9	45	38.6	20.9
F019	10.7	79	39.1	79	39.1	39.1	39.1	94.2	39.1	39.1	94.2	79	39.1
F020	35.2	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F021	7.12	24.6	15.9	24.6	15.9	15.9	15.9	27.5	15.9	15.9	27.5	24.6	15.9
F022	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F023	42.2	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F024	29	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F025	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F026	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F027	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F028	15.4	> 100	87.5	> 100	87.5	87.5	87.5	> 100	87.5	87.5	> 100	> 100	87.5
F029	50.9	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F030	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]												
Lab ID	**185**	**187 [5]**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**
K_{fs} (L/L_{PDMS}) [1]	**11,079,682**	**11,079,682**	**17,160,396**	**13,630,987**	**13,630,987**	**13,630,987**	**37,542,856**	**31,226,788**	**31,226,788**	**41,164,924**	**41,164,924**	**41,164,924**	**31,226,788**
F009	28.8	28.8	> 100	55.5	55.5	55.5	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F010	31.5	31.5	> 100	61.9	61.9	61.9	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F011	10.1	10.1	27.3	15.3	15.3	15.3	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F012	42.8	42.8	> 100	91.1	91.1	91.1	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F013	8.09	8.09	10.2	8.93	8.93	8.93	22.6	17.7	17.7	26	26	26	17.7
F014	2.07	2.07	2.83	2.36	2.36	2.36	7.97	5.78	5.78	9.59	9.59	9.59	5.78
F015	36.9	36.9	> 100	75.1	75.1	75.1	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F016	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F017	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F018	20.9	20.9	90.1	38.6	38.6	38.6	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F019	39.1	39.1	> 100	79	79	79	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F020	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F021	15.9	15.9	45	24.6	24.6	24.6	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F022	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F023	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F024	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F025	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F026	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F027	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F028	87.5	87.5	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F029	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
F030	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100

Table 6. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

	Model-predicted Correction Factors [4]					
Lab ID	**202**	**203**	**205**	**206**	**207**	**208**
Homolog	**Octa**	**Octa**	**Octa**	**Nona**	**Nona**	**Nona**
K_{fs} (L/L_{PDMS}) [1]	**41,164,924**	**31,226,788**	**37,542,856**	**84,047,986**	**113,377,614**	**113,377,614**
F009	> 100	> 100	> 100	> 100	> 100	> 100
F010	> 100	> 100	> 100	> 100	> 100	> 100
F011	> 100	> 100	> 100	> 100	> 100	> 100
F012	> 100	> 100	> 100	> 100	> 100	> 100
F013	26	17.7	22.6	> 100	> 100	> 100
F014	9.59	5.78	7.97	85.1	> 100	> 100
F015	> 100	> 100	> 100	> 100	> 100	> 100
F016	> 100	> 100	> 100	> 100	> 100	> 100
F017	> 100	> 100	> 100	> 100	> 100	> 100
F018	> 100	> 100	> 100	> 100	> 100	> 100
F019	> 100	> 100	> 100	> 100	> 100	> 100
F020	> 100	> 100	> 100	> 100	> 100	> 100
F021	> 100	> 100	> 100	> 100	> 100	> 100
F022	> 100	> 100	> 100	> 100	> 100	> 100
F023	> 100	> 100	> 100	> 100	> 100	> 100
F024	> 100	> 100	> 100	> 100	> 100	> 100
F025	> 100	> 100	> 100	> 100	> 100	> 100
F026	> 100	> 100	> 100	> 100	> 100	> 100
F027	> 100	> 100	> 100	> 100	> 100	> 100
F028	> 100	> 100	> 100	> 100	> 100	> 100
F029	> 100	> 100	> 100	> 100	> 100	> 100
F030	> 100	> 100	> 100	> 100	> 100	> 100

Notes:

1 K_{fs} (L/L_{PDMS}) is the Fiber PDMS-Solution Water Partition Coefficient (**Table 2**)

2 PCB = polychlorobiphenyl

3 L = liter

4 Correction factors (CFs) for each PCB congener were calculated using regression models developed for each sample (**Table 5**) and the K_{fs} value. If the model-predicted CF was greater than 100 (indicating that the sampling period was such that less than 1% of steady state concentrations were reached), conditions were considered insufficient to quantify an accurate and precise value.

5 PCB-187 not calculated (NC) because this congener may be a contaminant associated with the surrogate recovery standard added by the analytical laboratory.

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

				Concentration of PCB Congeners in Sediment Porewater [4] (ng $_{PCB}$/L $_{Porewater}$)												
Lab ID	**Station ID [3]**	**Deployment Type [3]**	**Sample Type [3]**	**1**	**3**	**5**	**6**	**7**	**8**	**9**	**12**	**13**	**14**	**15**	**16**	**17**
Homolog				**Mono**	**Mono**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Tri**	**Tri**
K_{fs} (L/L_{PDMS}) [1]				**16,388**	**71,536**	**88,009**	**88,009**	**88,009**	**88,009**	**88,009**	**183,877**	**183,877**	**183,877**	**183,877**	**179,691**	**179,691**
S (ng/L) [2]				**2,480,000**	**2,480,000**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**139,910**	**139,910**
F009	B7	SeaRing	Sample	*< 2*	*< 0.47*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.19*
F010	B10	SeaRing	Sample	*< 2*	*< 0.47*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.19*
F011	B9	SeaRing	Sample	*< 2*	*< 0.46*	*< 0.38*	*< 0.38*	*< 0.38*	*< 0.38*	*< 0.38*	*< 0.18*	*< 0.18*	*< 0.18*	*< 0.18*	*< 0.19*	*< 0.19*
F012	B8	SeaRing	Sample	*< 2*	*< 0.46*	*< 0.37*	*< 0.37*	*< 0.37*	*< 0.37*	*< 0.37*	*< 0.18*	*< 0.18*	*< 0.18*	*< 0.18*	*< 0.19*	*< 0.19*
F013	B6	SeaRing	Sample	*< 6.4*	*< 1.5*	*< 1.2*	*< 1.2*	*< 1.2*	*< 1.2*	*< 1.2*	*< 0.58*	*< 0.58*	*< 0.58*	*< 0.58*	*< 0.59*	*< 0.59*
F014	B4	SeaRing	Sample	*< 1.4*	*< 0.33*	*< 0.27*	*< 0.27*	*< 0.27*	*< 0.27*	*< 0.27*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*
F015	B5	SeaRing	Sample	*< 2.1*	*< 0.48*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.2*	*< 0.2*
F016	B3	SeaRing	Sample	*< 1.6*	*< 0.38*	*< 0.31*	*< 0.31*	*< 0.31*	*< 0.31*	*< 0.31*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*
F017	B3	SeaRing	Duplicate	*< 3.1*	*< 0.73*	*< 0.6*	*< 0.6*	*< 0.6*	*< 0.6*	*< 0.6*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.31*	*< 0.31*
F018	B2	SeaRing	Sample	*< 1.8*	*< 0.41*	*< 0.34*	*< 0.34*	*< 0.34*	*< 0.34*	*< 0.34*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*
F019	B1	SeaRing	Sample	*< 2.3*	*< 0.53*	*< 0.43*	*< 0.43*	*< 0.43*	*< 0.43*	*< 0.43*	*< 0.21*	*< 0.21*	*< 0.21*	*< 0.21*	*< 0.22*	*< 0.22*
F020	B9	Core	Sample	*< 1.6*	*< 0.37*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.15*	*< 0.15*	*< 0.15*	*< 0.15*	*< 0.16*	*< 0.16*
F021	B10	Core	Sample	*< 2.9*	*< 0.68*	*< 0.55*	*< 0.55*	*< 0.55*	*< 0.55*	*< 0.55*	*< 0.27*	*< 0.27*	*< 0.27*	*< 0.27*	*< 0.27*	*< 0.27*
F022	B4	Core	Sample	*< 1.5*	*< 0.37*	*< 0.31*	*< 0.31*	*< 0.31*	*< 0.31*	*< 0.31*	*< 0.16*	*< 0.16*	*< 0.16*	*< 0.16*	*< 0.16*	*< 0.16*
F023	B7	Core	Sample	*< 1.7*	*< 0.4*	*< 0.33*	*< 0.33*	*< 0.33*	*< 0.33*	*< 0.33*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*
F024	B1	Core	Duplicate	*< 2.1*	*< 0.48*	*< 0.4*	*< 0.4*	*< 0.4*	*< 0.4*	*< 0.4*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*
F025	B1	Core	Sample	*< 1.3*	*< 0.31*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*
F026	B3	Core	Sample	*< 1.4*	*< 0.34*	*< 0.28*	*< 0.28*	*< 0.28*	*< 0.28*	*< 0.28*	*< 0.15*	*< 0.15*	*< 0.15*	*< 0.15*	*< 0.15*	*< 0.15*
F027	B5	Core	Sample	*< 2.4*	*< 0.61*	*< 0.51*	*< 0.51*	*< 0.51*	*< 0.51*	*< 0.51*	*< 0.29*	*< 0.29*	*< 0.29*	*< 0.29*	*< 0.29*	*< 0.29*
F028	B2	Core	Sample	*< 1.8*	*< 0.42*	*< 0.35*	*< 0.35*	*< 0.35*	*< 0.35*	*< 0.35*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*
F029	B8	Core	Sample	*< 1.7*	*< 0.41*	*< 0.34*	*< 0.34*	*< 0.34*	*< 0.34*	*< 0.34*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*
F030	B6	Core	Sample	*< 1.3*	*< 0.32*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.14*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)														
Lab ID	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**31**	**32**	**33**	**34**	**35**	**37**
Homolog	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**
K_{fs} (L/L_{PDMS}) [1]	**179,691**	**108,275**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**472,637**	**472,637**
S (ng/L) [2]	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**
F009	*< 0.19*	*< 0.32*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.079*	*< 0.079*
F010	*< 0.19*	*< 0.32*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.08*	*< 0.08*
F011	*< 0.19*	*< 0.31*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.075*	*< 0.075*
F012	*< 0.19*	*< 0.31*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.078*	*< 0.078*
F013	*< 0.59*	*< 0.98*	*< 0.37*	*< 0.37*	*< 0.59*	*< 0.37*	*< 0.37*	*< 0.59*	*< 0.37*	*< 0.37*	*< 0.59*	*< 0.37*	*< 0.37*	*< 0.23*	*< 0.23*
F014	*< 0.13*	*< 0.22*	*< 0.082*	*< 0.082*	*< 0.13*	*< 0.082*	*< 0.082*	*< 0.13*	*< 0.082*	*< 0.082*	*< 0.13*	*< 0.082*	*< 0.082*	*< 0.051*	*< 0.051*
F015	*< 0.2*	*< 0.32*	*< 0.13*	*< 0.13*	*< 0.2*	*< 0.13*	*< 0.13*	*< 0.2*	*< 0.13*	*< 0.13*	*< 0.2*	*< 0.13*	*< 0.13*	*< 0.081*	*< 0.081*
F016	*< 0.17*	*< 0.26*	*< 0.12*	*< 0.12*	*< 0.17*	*< 0.12*	*< 0.12*	*< 0.17*	*< 0.12*	*< 0.12*	*< 0.17*	*< 0.12*	*< 0.12*	*< 0.088*	*< 0.088*
F017	*< 0.31*	*< 0.49*	*< 0.2*	*< 0.2*	*< 0.31*	*< 0.2*	*< 0.2*	*< 0.31*	*< 0.2*	*< 0.2*	*< 0.31*	*< 0.2*	*< 0.2*	*< 0.13*	*< 0.13*
F018	*< 0.17*	*< 0.28*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.069*	*< 0.069*
F019	*< 0.22*	*< 0.35*	*< 0.14*	*< 0.14*	*< 0.22*	*< 0.14*	*< 0.14*	*< 0.22*	*< 0.14*	*< 0.14*	*< 0.22*	*< 0.14*	*< 0.14*	*< 0.089*	*< 0.089*
F020	*< 0.16*	*< 0.25*	*< 0.1*	*< 0.1*	*< 0.16*	*< 0.1*	*< 0.1*	*< 0.16*	*< 0.1*	*< 0.1*	*< 0.16*	*< 0.1*	*< 0.1*	*< 0.069*	*< 0.069*
F021	*< 0.27*	*< 0.45*	*< 0.17*	*< 0.17*	*< 0.27*	*< 0.17*	*< 0.17*	*< 0.27*	*< 0.17*	*< 0.17*	*< 0.27*	*< 0.17*	*< 0.17*	*< 0.11*	*< 0.11*
F022	*< 0.16*	*< 0.25*	*< 0.11*	*< 0.11*	*< 0.16*	*< 0.11*	*< 0.11*	*< 0.16*	*< 0.11*	*< 0.11*	*< 0.16*	*< 0.11*	*< 0.11*	*< 0.082*	*< 0.082*
F023	*< 0.17*	*< 0.27*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.075*	*< 0.075*
F024	*< 0.2*	*< 0.33*	*< 0.13*	*< 0.13*	*< 0.2*	*< 0.13*	*< 0.13*	*< 0.2*	*< 0.13*	*< 0.13*	*< 0.2*	*< 0.13*	*< 0.13*	*< 0.088*	*< 0.088*
F025	*< 0.13*	*< 0.21*	*< 0.091*	*< 0.091*	*< 0.13*	*< 0.091*	*< 0.091*	*< 0.13*	*< 0.091*	*< 0.091*	*< 0.13*	*< 0.091*	*< 0.091*	*< 0.064*	*< 0.064*
F026	*< 0.15*	*< 0.23*	*< 0.1*	*< 0.1*	*< 0.15*	*< 0.1*	*< 0.1*	*< 0.15*	*< 0.1*	*< 0.1*	*< 0.15*	*< 0.1*	*< 0.1*	*< 0.074*	*< 0.074*
F027	*< 0.29*	*< 0.43*	*< 0.22*	*< 0.22*	*< 0.29*	*< 0.22*	*< 0.22*	*< 0.29*	*< 0.22*	*< 0.22*	*< 0.29*	*< 0.22*	*< 0.22*	*< 0.18*	*< 0.18*
F028	*< 0.17*	*< 0.28*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.074*	*< 0.074*
F029	*< 0.17*	*< 0.28*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.17*	*< 0.11*	*< 0.11*	*< 0.078*	*< 0.078*
F030	*< 0.14*	*< 0.22*	*< 0.095*	*< 0.095*	*< 0.14*	*< 0.095*	*< 0.095*	*< 0.14*	*< 0.095*	*< 0.095*	*< 0.14*	*< 0.095*	*< 0.095*	*< 0.069*	*< 0.069*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in Sediment Porewater [4] (ng $_{PCB}$/L $_{Porewater}$)														
	40	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L$_{PDMS}$) [1]	**581,470**	**581,470**	**581,470**	**581,470**	**402,279**	**402,279**	**581,470**	**581,470**	**581,470**	**402,279**	**581,470**	**402,279**	**441,090**	**840,480**	**581,470**
S (ng/L) [2]	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**
F009	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.091*	*< 0.091*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.091*	*< 0.066*	*< 0.091*	*< 0.084*	**0.04**	*< 0.066*
F010	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.092*	*< 0.092*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.092*	*< 0.067*	*< 0.092*	*< 0.085*	**0.032**	*< 0.067*
F011	*< 0.062*	*< 0.062*	*< 0.062*	*< 0.062*	*< 0.087*	*< 0.087*	*< 0.062*	*< 0.062*	*< 0.062*	*< 0.087*	*< 0.062*	*< 0.087*	*< 0.08*	**0.025**	*< 0.062*
F012	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.09*	*< 0.09*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.09*	*< 0.066*	*< 0.09*	*< 0.083*	*< 0.049*	*< 0.066*
F013	*< 0.19*	*< 0.19*	*< 0.19*	**0.27**	*< 0.27*	*< 0.27*	*< 0.19*	*< 0.19*	**0.34**	*< 0.27*	**0.64**	*< 0.27*	*< 0.24*	**0.092**	*< 0.19*
F014	*< 0.042*	*< 0.042*	*< 0.042*	*< 0.042*	*< 0.06*	*< 0.06*	*< 0.042*	*< 0.042*	*< 0.042*	*< 0.06*	*< 0.042*	*< 0.06*	*< 0.055*	*< 0.029*	*< 0.042*
F015	*< 0.068*	*< 0.068*	*< 0.068*	**0.035**	*< 0.094*	*< 0.094*	*< 0.068*	*< 0.068*	**0.036**	*< 0.094*	*< 0.068*	*< 0.094*	*< 0.087*	**0.037**	*< 0.068*
F016	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.095*	*< 0.095*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.095*	*< 0.08*	*< 0.095*	*< 0.091*	**0.075**	*< 0.08*
F017	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.15*	*< 0.15*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.15*	*< 0.12*	*< 0.15*	*< 0.14*	*< 0.091*	*< 0.12*
F018	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.08*	*< 0.08*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.08*	*< 0.057*	*< 0.08*	*< 0.073*	*< 0.042*	*< 0.057*
F019	*< 0.075*	*< 0.075*	*< 0.075*	*< 0.075*	*< 0.1*	*< 0.1*	*< 0.075*	*< 0.075*	*< 0.075*	*< 0.1*	*< 0.075*	*< 0.1*	*< 0.095*	**0.052**	*< 0.075*
F020	*< 0.059*	*< 0.059*	*< 0.059*	*< 0.059*	*< 0.078*	*< 0.078*	*< 0.059*	*< 0.059*	*< 0.059*	*< 0.078*	*< 0.059*	*< 0.078*	*< 0.073*	**0.04**	*< 0.059*
F021	*< 0.091*	*< 0.091*	*< 0.091*	**0.049**	*< 0.13*	*< 0.13*	*< 0.091*	*< 0.091*	**0.13**	*< 0.13*	*< 0.091*	*< 0.13*	*< 0.12*	*< 0.066*	*< 0.091*
F022	*< 0.074*	*< 0.074*	*< 0.074*	*< 0.074*	*< 0.09*	*< 0.09*	*< 0.074*	*< 0.074*	*< 0.074*	*< 0.09*	*< 0.074*	*< 0.09*	*< 0.086*	*< 0.066*	*< 0.074*
F023	*< 0.065*	*< 0.065*	*< 0.065*	*< 0.065*	*< 0.086*	*< 0.086*	*< 0.065*	*< 0.065*	*< 0.065*	*< 0.086*	*< 0.065*	*< 0.086*	*< 0.079*	**0.051**	*< 0.065*
F024	*< 0.075*	*< 0.075*	*< 0.075*	*< 0.075*	*< 0.1*	*< 0.1*	*< 0.075*	*< 0.075*	*< 0.075*	*< 0.1*	*< 0.075*	*< 0.1*	*< 0.092*	*< 0.058*	*< 0.075*
F025	*< 0.056*	*< 0.056*	*< 0.056*	*< 0.056*	*< 0.071*	*< 0.071*	*< 0.056*	*< 0.056*	*< 0.056*	*< 0.071*	*< 0.056*	*< 0.071*	*< 0.067*	**0.05**	*< 0.056*
F026	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.082*	*< 0.082*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.082*	*< 0.066*	*< 0.082*	*< 0.077*	*< 0.058*	*< 0.066*
F027	*< 0.18*	*< 0.18*	*< 0.18*	**0.3**	*< 0.19*	*< 0.19*	*< 0.18*	*< 0.18*	**0.35**	*< 0.19*	*< 0.18*	*< 0.19*	*< 0.19*	**0.21**	*< 0.18*
F028	*< 0.063*	*< 0.063*	*< 0.063*	*< 0.063*	*< 0.085*	*< 0.085*	*< 0.063*	*< 0.063*	*< 0.063*	*< 0.085*	*< 0.063*	*< 0.085*	*< 0.078*	*< 0.048*	*< 0.063*
F029	*< 0.068*	*< 0.068*	*< 0.068*	**0.12**	*< 0.088*	*< 0.088*	*< 0.068*	*< 0.068*	**0.12**	*< 0.088*	*< 0.068*	*< 0.088*	*< 0.083*	*< 0.054*	*< 0.068*
F030	*< 0.061*	*< 0.061*	*< 0.061*	**0.21**	*< 0.076*	*< 0.076*	*< 0.061*	*< 0.061*	**0.28**	*< 0.076*	**0.69**	*< 0.076*	*< 0.071*	*< 0.053*	*< 0.061*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)													
Lab ID	**60**	**63**	**64**	**66**	**67**	**70**	**71**	**73**	**74**	**75**	**77**	**81/87**	**82**	**83**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra/Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**840,480**	**840,480**	**581,470**	**840,480**	**840,480**	**840,480**	**581,470**	**581,470**	**840,480**	**581,470**	**1,214,863**	**1,460,587**	**1,756,011**	**1,756,011**
S (ng/L) [2]	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**19,787**	**7,328**	**7,328**
F009	*< 0.049*	*< 0.049*	*< 0.066*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.066*	*< 0.066*	*< 0.049*	*< 0.066*	*< 0.037*	*< 0.033*	*< 0.03*	*< 0.03*
F010	*< 0.049*	*< 0.049*	*< 0.067*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.067*	*< 0.067*	*< 0.049*	*< 0.067*	*< 0.038*	*< 0.034*	*< 0.03*	*< 0.03*
F011	*< 0.045*	*< 0.045*	*< 0.062*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.062*	*< 0.062*	*< 0.045*	*< 0.062*	*< 0.033*	*< 0.028*	*< 0.025*	*< 0.025*
F012	*< 0.049*	*< 0.049*	*< 0.066*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.066*	*< 0.066*	*< 0.049*	*< 0.066*	*< 0.038*	*< 0.034*	*< 0.031*	*< 0.031*
F013	*< 0.13*	*< 0.13*	*< 0.19*	**0.33**	*< 0.13*	**0.23**	*< 0.19*	*< 0.19*	*< 0.13*	*< 0.19*	*< 0.091*	**0.1**	*< 0.064*	*< 0.064*
F014	*< 0.029*	*< 0.029*	*< 0.042*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.042*	*< 0.042*	*< 0.029*	*< 0.042*	*< 0.021*	*< 0.017*	*< 0.015*	*< 0.015*
F015	*< 0.051*	*< 0.051*	*< 0.068*	*< 0.051*	*< 0.051*	**0.029**	*< 0.068*	*< 0.068*	*< 0.051*	*< 0.068*	*< 0.039*	**0.19**	*< 0.031*	*< 0.031*
F016	*< 0.072*	*< 0.072*	*< 0.08*	**0.05**	*< 0.072*	*< 0.072*	*< 0.08*	*< 0.08*	*< 0.072*	*< 0.08*	*< 0.074*	*< 0.08*	*< 0.09*	*< 0.09*
F017	*< 0.091*	*< 0.091*	*< 0.12*	*< 0.091*	*< 0.091*	*< 0.091*	*< 0.12*	*< 0.12*	*< 0.091*	*< 0.12*	*< 0.076*	*< 0.071*	*< 0.069*	*< 0.069*
F018	*< 0.042*	*< 0.042*	*< 0.057*	*< 0.042*	*< 0.042*	*< 0.042*	*< 0.057*	*< 0.057*	*< 0.042*	*< 0.057*	*< 0.032*	*< 0.028*	*< 0.025*	*< 0.025*
F019	*< 0.055*	*< 0.055*	*< 0.075*	*< 0.055*	*< 0.055*	*< 0.055*	*< 0.075*	*< 0.075*	*< 0.055*	*< 0.075*	*< 0.042*	*< 0.038*	*< 0.034*	*< 0.034*
F020	*< 0.047*	*< 0.047*	*< 0.059*	*< 0.047*	*< 0.047*	*< 0.047*	*< 0.059*	*< 0.059*	*< 0.047*	*< 0.059*	*< 0.039*	*< 0.037*	*< 0.036*	*< 0.036*
F021	*< 0.066*	*< 0.066*	*< 0.091*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.091*	*< 0.091*	*< 0.066*	*< 0.091*	*< 0.049*	*< 0.042*	*< 0.037*	*< 0.037*
F022	*< 0.066*	*< 0.066*	*< 0.074*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.074*	*< 0.074*	*< 0.066*	*< 0.074*	*< 0.065*	*< 0.068*	*< 0.076*	*< 0.076*
F023	*< 0.052*	*< 0.052*	*< 0.065*	*< 0.052*	*< 0.052*	*< 0.052*	*< 0.065*	*< 0.065*	*< 0.052*	*< 0.065*	*< 0.044*	*< 0.041*	*< 0.04*	*< 0.04*
F024	*< 0.058*	*< 0.058*	*< 0.075*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.075*	*< 0.075*	*< 0.058*	*< 0.075*	*< 0.048*	*< 0.044*	*< 0.042*	*< 0.042*
F025	*< 0.047*	*< 0.047*	*< 0.056*	*< 0.047*	*< 0.047*	*< 0.047*	*< 0.056*	*< 0.056*	*< 0.047*	*< 0.056*	*< 0.043*	*< 0.044*	*< 0.045*	*< 0.045*
F026	*< 0.058*	*< 0.058*	*< 0.066*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.066*	*< 0.066*	*< 0.058*	*< 0.066*	*< 0.056*	*< 0.058*	*< 0.063*	*< 0.063*
F027	*< 0.19*	*< 0.19*	*< 0.18*	*< 0.19*	*< 0.19*	*< 0.19*	*< 0.18*	*< 0.18*	*< 0.19*	*< 0.18*	*< 0.25*	**0.27**	*< 0.43*	*< 0.43*
F028	*< 0.048*	*< 0.048*	*< 0.063*	*< 0.048*	*< 0.048*	*< 0.048*	*< 0.063*	*< 0.063*	*< 0.048*	*< 0.063*	*< 0.038*	*< 0.035*	*< 0.032*	*< 0.032*
F029	*< 0.054*	*< 0.054*	*< 0.068*	*< 0.054*	*< 0.054*	*< 0.054*	*< 0.068*	*< 0.068*	*< 0.054*	*< 0.068*	*< 0.046*	**0.082**	*< 0.043*	*< 0.043*
F030	*< 0.053*	*< 0.053*	*< 0.061*	*< 0.053*	*< 0.053*	**0.22**	*< 0.061*	*< 0.061*	*< 0.053*	*< 0.061*	*< 0.05*	*< 0.052*	*< 0.055*	*< 0.055*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)												
Lab ID	**84**	**85**	**87**	**90**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**101**	**103**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**1,301,749**	**1,756,011**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**1,301,749**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**
S (ng/L) [2]	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**
F009	< 0.036	< 0.03	< 0.03	< 0.03	< 0.036	**0.025**	< 0.036	< 0.036	< 0.03	< 0.03	< 0.036	< 0.03	< 0.036
F010	< 0.036	< 0.03	< 0.03	< 0.03	< 0.036	**0.026**	< 0.036	< 0.036	< 0.03	< 0.03	< 0.036	< 0.03	**0.044**
F011	< 0.031	< 0.025	< 0.025	< 0.025	< 0.031	**0.018**	< 0.031	< 0.031	< 0.025	< 0.025	< 0.031	< 0.025	< 0.031
F012	< 0.036	< 0.031	< 0.031	< 0.031	< 0.036	**0.027**	< 0.036	< 0.036	< 0.031	< 0.031	< 0.036	< 0.031	< 0.036
F013	**0.16**	< 0.064	**0.076**	< 0.064	**0.059**	**0.083**	< 0.085	**0.32**	**0.065**	< 0.064	< 0.085	**0.27**	**0.082**
F014	< 0.019	< 0.015	< 0.015	< 0.015	< 0.019	< 0.015	< 0.019	< 0.019	< 0.015	< 0.015	< 0.019	< 0.015	< 0.019
F015	< 0.037	< 0.031	< 0.031	< 0.031	< 0.037	**0.036**	< 0.037	**0.048**	**0.017**	< 0.031	< 0.037	**0.058**	< 0.037
F016	< 0.076	< 0.09	< 0.09	< 0.09	< 0.076	< 0.09	< 0.076	**0.042**	< 0.09	< 0.09	< 0.076	< 0.09	< 0.076
F017	< 0.074	< 0.069	< 0.069	< 0.069	< 0.074	< 0.069	< 0.074	< 0.074	< 0.069	< 0.069	< 0.074	< 0.069	< 0.074
F018	< 0.031	< 0.025	< 0.025	< 0.025	< 0.031	< 0.025	< 0.031	< 0.031	< 0.025	< 0.025	< 0.031	< 0.025	**0.044**
F019	< 0.041	< 0.034	< 0.034	< 0.034	< 0.041	**0.049**	< 0.041	< 0.041	< 0.034	< 0.034	< 0.041	< 0.034	< 0.041
F020	< 0.038	< 0.036	< 0.036	< 0.036	< 0.038	< 0.036	< 0.038	< 0.038	< 0.036	< 0.036	< 0.038	< 0.036	< 0.038
F021	< 0.046	< 0.037	< 0.037	< 0.037	< 0.046	< 0.037	< 0.046	< 0.046	< 0.037	< 0.037	< 0.046	< 0.037	< 0.046
F022	< 0.066	< 0.076	< 0.076	< 0.076	< 0.066	< 0.076	< 0.066	< 0.066	< 0.076	< 0.076	< 0.066	< 0.076	< 0.066
F023	< 0.043	< 0.04	< 0.04	< 0.04	< 0.043	< 0.04	< 0.043	< 0.043	< 0.04	< 0.04	< 0.043	< 0.04	< 0.043
F024	< 0.046	< 0.042	< 0.042	< 0.042	< 0.046	< 0.042	< 0.046	< 0.046	< 0.042	< 0.042	< 0.046	< 0.042	< 0.046
F025	< 0.043	< 0.045	< 0.045	< 0.045	< 0.043	< 0.045	< 0.043	< 0.043	< 0.045	< 0.045	< 0.043	< 0.045	< 0.043
F026	< 0.056	< 0.063	< 0.063	< 0.063	< 0.056	< 0.063	< 0.056	< 0.056	< 0.063	< 0.063	< 0.056	< 0.063	< 0.056
F027	< 0.27	< 0.43	< 0.43	< 0.43	< 0.27	< 0.43	< 0.27	< 0.27	**0.41**	< 0.43	< 0.27	**1.5**	< 0.27
F028	< 0.037	< 0.032	< 0.032	< 0.032	< 0.037	< 0.032	< 0.037	< 0.037	< 0.032	< 0.032	< 0.037	< 0.032	< 0.037
F029	< 0.045	< 0.043	< 0.043	< 0.043	< 0.045	< 0.043	< 0.045	< 0.045	**0.053**	**0.14**	< 0.045	**0.2**	< 0.045
F030	< 0.051	< 0.055	**0.13**	< 0.055	**0.077**	< 0.055	< 0.051	**0.44**	**0.13**	**0.28**	< 0.051	**0.47**	< 0.051

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)												
	105	**107**	**110**	**114**	**115**	**117**	**118**	**119**	**122**	**123**	**124**	**128**	**129**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**2,368,794**	**2,368,794**	**1,756,011**	**2,368,794**	**1,756,011**	**1,756,011**	**2,368,794**	**1,756,011**	**2,368,794**	**2,368,794**	**2,368,794**	**4,949,112**	**4,949,112**
S (ng/L) [2]	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**1,647**	**1,647**
F009	*< 0.026*	*< 0.026*	*< 0.03*	*< 0.026*	*< 0.03*	*< 0.03*	*< 0.026*	*< 0.03*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.024*	*< 0.024*
F010	*< 0.026*	*< 0.026*	*< 0.03*	*< 0.026*	*< 0.03*	*< 0.03*	*< 0.026*	*< 0.03*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.025*	*< 0.025*
F011	*< 0.02*	*< 0.02*	*< 0.025*	*< 0.02*	*< 0.025*	*< 0.025*	*< 0.02*	*< 0.025*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.015*	*< 0.015*
F012	*< 0.027*	*< 0.027*	*< 0.031*	*< 0.027*	*< 0.031*	*< 0.031*	*< 0.027*	*< 0.031*	*< 0.027*	*< 0.027*	*< 0.027*	*< 0.028*	*< 0.028*
F013	*< 0.049*	**0.12**	*< 0.064*	*< 0.049*	*< 0.064*	*< 0.064*	**0.095**	*< 0.064*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.026*	*< 0.026*
F014	*< 0.011*	*< 0.011*	*< 0.015*	*< 0.011*	*< 0.015*	*< 0.015*	*< 0.011*	*< 0.015*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.0061*	*< 0.0061*
F015	*< 0.028*	*< 0.028*	*< 0.031*	*< 0.028*	*< 0.031*	*< 0.031*	*< 0.028*	*< 0.031*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.027*	*< 0.027*
F016	*< 0.13*	*< 0.13*	*< 0.09*	*< 0.13*	*< 0.09*	*< 0.09*	*< 0.13*	*< 0.09*	*< 0.13*	*< 0.13*	*< 0.13*	*NC*	*NC*
F017	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.069*	*< 0.12*	*< 0.12*
F018	*< 0.022*	**0.039**	*< 0.025*	*< 0.022*	*< 0.025*	*< 0.025*	*< 0.022*	*< 0.025*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.019*	*< 0.019*
F019	*< 0.03*	*< 0.03*	*< 0.034*	*< 0.03*	*< 0.034*	*< 0.034*	*< 0.03*	*< 0.034*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.029*	*< 0.029*
F020	*< 0.037*	*< 0.037*	*< 0.036*	*< 0.037*	*< 0.036*	*< 0.036*	*< 0.037*	*< 0.036*	*< 0.037*	*< 0.037*	*< 0.037*	*< 0.067*	*< 0.067*
F021	*< 0.03*	*< 0.03*	*< 0.037*	*< 0.03*	*< 0.037*	*< 0.037*	*< 0.03*	*< 0.037*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.023*	*< 0.023*
F022	*< 0.1*	*< 0.1*	*< 0.076*	*< 0.1*	*< 0.076*	*< 0.076*	*< 0.1*	*< 0.076*	*< 0.1*	*< 0.1*	*< 0.1*	*NC*	*NC*
F023	*< 0.042*	*< 0.042*	*< 0.04*	*< 0.042*	*< 0.04*	*< 0.04*	*< 0.042*	*< 0.04*	*< 0.042*	*< 0.042*	*< 0.042*	*< 0.079*	*< 0.079*
F024	*< 0.041*	*< 0.041*	*< 0.042*	*< 0.041*	*< 0.042*	*< 0.042*	*< 0.041*	*< 0.042*	*< 0.041*	*< 0.041*	*< 0.041*	*< 0.062*	*< 0.062*
F025	*< 0.053*	*< 0.053*	*< 0.045*	*< 0.053*	*< 0.045*	*< 0.045*	*< 0.053*	*< 0.045*	*< 0.053*	*< 0.053*	*< 0.053*	*< 0.18*	*< 0.18*
F026	*< 0.081*	*< 0.081*	*< 0.063*	*< 0.081*	*< 0.063*	*< 0.063*	*< 0.081*	*< 0.063*	*< 0.081*	*< 0.081*	*< 0.081*	*< 0.39*	*< 0.39*
F027	*NC*	*NC*	*< 0.43*	*NC*	*< 0.43*	*< 0.43*	*NC*	*< 0.43*	*NC*	*NC*	*NC*	*NC*	*NC*
F028	*< 0.03*	*< 0.03*	*< 0.032*	*< 0.03*	*< 0.032*	*< 0.032*	*< 0.03*	*< 0.032*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.037*	*< 0.037*
F029	*< 0.045*	**0.12**	*< 0.043*	*< 0.045*	*< 0.043*	*< 0.043*	**0.12**	*< 0.043*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.092*	*< 0.092*
F030	*< 0.07*	**0.22**	*< 0.055*	*< 0.07*	*< 0.055*	*< 0.055*	**0.3**	*< 0.055*	*< 0.07*	*< 0.07*	*< 0.07*	*< 0.31*	*< 0.31*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)											
	130	**131**	**132**	**134**	**135**	**136**	**137**	**138**	**141**	**144**	**146**	**147**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**3,931,220**	**4,836,457**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**	**4,949,112**	**3,931,220**
S (ng/L) [2]	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**
F009	*< 0.024*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.023*	*< 0.024*	*< 0.023*
F010	*< 0.025*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.025*	*< 0.025*	*< 0.025*	*< 0.025*	*< 0.024*	*< 0.025*	*< 0.024*
F011	*< 0.015*	*< 0.016*	*< 0.016*	*< 0.016*	*< 0.016*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.016*	*< 0.015*	*< 0.016*
F012	*< 0.028*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.026*	*< 0.028*	*< 0.026*
F013	*< 0.026*	*< 0.031*	*< 0.031*	*< 0.031*	*< 0.031*	*< 0.026*	*< 0.026*	**0.027**	*< 0.026*	*< 0.031*	*< 0.026*	*< 0.031*
F014	*< 0.0061*	*< 0.0073*	*< 0.0073*	*< 0.0073*	*< 0.0073*	*< 0.0062*	*< 0.0061*	*< 0.0061*	*< 0.0061*	*< 0.0073*	*< 0.0061*	*< 0.0073*
F015	*< 0.027*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.027*	*< 0.027*	*< 0.027*	*< 0.027*	*< 0.026*	*< 0.027*	*< 0.026*
F016	*NC*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.39*	*NC*	*NC*	*NC*	*NC*	*< 0.39*	*NC*	*< 0.39*
F017	*< 0.12*	*< 0.09*	*< 0.09*	*< 0.09*	*< 0.09*	*< 0.11*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.09*	*< 0.12*	*< 0.09*
F018	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*
F019	*< 0.029*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.028*	*< 0.029*	*< 0.028*
F020	*< 0.067*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.065*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.05*	*< 0.067*	*< 0.05*
F021	*< 0.023*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.024*	*< 0.023*	*< 0.024*
F022	*NC*	*< 0.27*	*< 0.27*	*< 0.27*	*< 0.27*	*NC*	*NC*	*NC*	*NC*	*< 0.27*	*NC*	*< 0.27*
F023	*< 0.079*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.077*	*< 0.079*	*< 0.079*	*< 0.079*	*< 0.058*	*< 0.079*	*< 0.058*
F024	*< 0.062*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.06*	*< 0.062*	*< 0.062*	*< 0.062*	*< 0.049*	*< 0.062*	*< 0.049*
F025	*< 0.18*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.17*	*< 0.18*	*< 0.18*	*< 0.18*	*< 0.1*	*< 0.18*	*< 0.1*
F026	*< 0.39*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.36*	*< 0.39*	*< 0.39*	*< 0.39*	*< 0.2*	*< 0.39*	*< 0.2*
F027	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F028	*< 0.037*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.036*	*< 0.037*	*< 0.037*	*< 0.037*	*< 0.032*	*< 0.037*	*< 0.032*
F029	*< 0.092*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.088*	*< 0.092*	**0.2**	*< 0.092*	*< 0.066*	*< 0.092*	*< 0.066*
F030	*< 0.31*	*< 0.16*	*< 0.16*	*< 0.16*	*< 0.16*	*< 0.29*	*< 0.31*	**0.79**	*< 0.31*	*< 0.16*	*< 0.31*	*< 0.16*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)											
Lab ID	**149**	**151**	**153**	**156**	**157**	**158**	**163**	**164**	**167**	**170**	**171**	**172**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**3,931,220**	**3,931,220**	**4,949,112**	**6,375,692**	**6,375,692**	**4,949,112**	**4,949,112**	**4,949,112**	**6,375,692**	**13,630,987**	**11,079,682**	**13,630,987**
S (ng/L) [2]	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**367**	**367**	**367**
F009	*< 0.023*	*< 0.023*	*< 0.024*	*< 0.027*	*< 0.027*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.027*	*< 0.081*	*< 0.052*	*< 0.081*
F010	*< 0.024*	*< 0.024*	**0.017**	*< 0.028*	*< 0.028*	*< 0.025*	*< 0.025*	*< 0.025*	*< 0.028*	*< 0.091*	*< 0.057*	*< 0.091*
F011	*< 0.016*	*< 0.016*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.022*	*< 0.018*	*< 0.022*
F012	*< 0.026*	*< 0.026*	*< 0.028*	*< 0.033*	*< 0.033*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.033*	*< 0.13*	*< 0.077*	*< 0.13*
F013	**0.035**	*< 0.031*	**0.034**	*< 0.021*	*< 0.021*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.021*	*< 0.013*	*< 0.015*	*< 0.013*
F014	*< 0.0073*	*< 0.0073*	*< 0.0061*	*< 0.0051*	*< 0.0051*	*< 0.0061*	*< 0.0061*	*< 0.0061*	*< 0.0051*	*< 0.0035*	*< 0.0037*	*< 0.0035*
F015	*< 0.026*	*< 0.026*	**0.032**	*< 0.031*	*< 0.031*	*< 0.027*	*< 0.027*	*< 0.027*	*< 0.031*	*< 0.11*	*< 0.067*	*< 0.11*
F016	*< 0.39*	*< 0.39*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F017	*< 0.09*	*< 0.09*	*< 0.12*	*< 0.19*	*< 0.19*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.19*	*NC*	*NC*	*NC*
F018	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.021*	*< 0.021*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.021*	*< 0.057*	*< 0.038*	*< 0.057*
F019	*< 0.028*	*< 0.028*	*< 0.029*	*< 0.034*	*< 0.034*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.034*	*< 0.12*	*< 0.071*	*< 0.12*
F020	*< 0.05*	*< 0.05*	*< 0.067*	*< 0.11*	*< 0.11*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.11*	*NC*	*NC*	*NC*
F021	*< 0.024*	*< 0.024*	*< 0.023*	*< 0.022*	*< 0.022*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.022*	*< 0.036*	*< 0.029*	*< 0.036*
F022	*< 0.27*	*< 0.27*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F023	*< 0.058*	*< 0.058*	*< 0.079*	*< 0.13*	*< 0.13*	*< 0.079*	*< 0.079*	*< 0.079*	*< 0.13*	*NC*	*NC*	*NC*
F024	*< 0.049*	*< 0.049*	*< 0.062*	*< 0.091*	*< 0.091*	*< 0.062*	*< 0.062*	*< 0.062*	*< 0.091*	*NC*	*NC*	*NC*
F025	*< 0.1*	*< 0.1*	*< 0.18*	*NC*	*NC*	*< 0.18*	*< 0.18*	*< 0.18*	*NC*	*NC*	*NC*	*NC*
F026	*< 0.2*	*< 0.2*	*< 0.39*	*NC*	*NC*	*< 0.39*	*< 0.39*	*< 0.39*	*NC*	*NC*	*NC*	*NC*
F027	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F028	*< 0.032*	*< 0.032*	*< 0.037*	*< 0.048*	*< 0.048*	*< 0.037*	*< 0.037*	*< 0.037*	*< 0.048*	*NC*	*< 0.16*	*NC*
F029	**0.092**	*< 0.066*	**0.22**	*< 0.16*	*< 0.16*	*< 0.092*	*< 0.092*	*< 0.092*	*< 0.16*	*NC*	*NC*	*NC*
F030	**0.29**	*< 0.16*	**0.68**	*NC*	*NC*	*< 0.31*	*< 0.31*	*< 0.31*	*NC*	*NC*	*NC*	*NC*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)											
Lab ID	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**185**	**187**	**189**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**11,079,682**	**11,079,682**	**11,079,682**	**14,273,396**	**11,079,682**	**11,079,682**	**14,273,396**	**13,630,987**	**11,079,682**	**11,079,682**	**11,079,682**	**17,160,396**
S (ng/L) [2]	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**
F009	*< 0.052*	*< 0.052*	*< 0.052*	*< 0.092*	*< 0.052*	*< 0.052*	*< 0.092*	*< 0.081*	*< 0.052*	*< 0.052*	*NC*	*NC*
F010	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.1*	*< 0.057*	*< 0.057*	*< 0.1*	*< 0.091*	*< 0.057*	*< 0.057*	*NC*	*NC*
F011	*< 0.018*	*< 0.018*	*< 0.018*	*< 0.024*	*< 0.018*	*< 0.018*	*< 0.024*	*< 0.022*	*< 0.018*	*< 0.018*	*NC*	*< 0.032*
F012	*< 0.077*	*< 0.077*	*< 0.077*	*NC*	*< 0.077*	*< 0.077*	*NC*	*< 0.13*	*< 0.077*	*< 0.077*	*NC*	*NC*
F013	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.013*	*< 0.015*	*< 0.015*	*< 0.013*	*< 0.013*	*< 0.015*	*< 0.015*	*NC*	*< 0.012*
F014	*< 0.0037*	*< 0.0037*	*< 0.0037*	*< 0.0034*	*< 0.0037*	*< 0.0037*	*< 0.0034*	*< 0.0035*	*< 0.0037*	*< 0.0037*	*NC*	*< 0.0033*
F015	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.13*	*< 0.067*	*< 0.067*	*< 0.13*	*< 0.11*	*< 0.067*	*< 0.067*	*NC*	*NC*
F016	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F017	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F018	*< 0.038*	*< 0.038*	*< 0.038*	*< 0.063*	*< 0.038*	*< 0.038*	*< 0.063*	*< 0.057*	*< 0.038*	*< 0.038*	*NC*	*< 0.11*
F019	*< 0.071*	*< 0.071*	*< 0.071*	*< 0.13*	*< 0.071*	*< 0.071*	*< 0.13*	*< 0.12*	*< 0.071*	*< 0.071*	*NC*	*NC*
F020	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F021	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.039*	*< 0.029*	*< 0.029*	*< 0.039*	*< 0.036*	*< 0.029*	*< 0.029*	*NC*	*< 0.052*
F022	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F023	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F024	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F025	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F026	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F027	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F028	*< 0.16*	*< 0.16*	*< 0.16*	*NC*	*< 0.16*	*< 0.16*	*NC*	*NC*	*< 0.16*	*< 0.16*	*NC*	*NC*
F029	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F030	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)										
Lab ID	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**	**202**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**
K_{fs} (L/L_{PDMS}) [1]	**13,630,987**	**13,630,987**	**13,630,987**	**37,542,856**	**31,226,788**	**31,226,788**	**41,164,924**	**41,164,924**	**41,164,924**	**31,226,788**	**41,164,924**
S (ng/L) [2]	**367**	**367**	**367**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**
F009	*< 0.081*	*< 0.081*	*< 0.081*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F010	*< 0.091*	*< 0.091*	*< 0.091*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F011	*< 0.022*	*< 0.022*	*< 0.022*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F012	*< 0.13*	*< 0.13*	*< 0.13*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F013	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.012*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.013*
F014	*< 0.0035*	*< 0.0035*	*< 0.0035*	*< 0.0042*	*< 0.0037*	*< 0.0037*	*< 0.0047*	*< 0.0047*	*< 0.0047*	*< 0.0037*	*< 0.0047*
F015	*< 0.11*	*< 0.11*	*< 0.11*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F016	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F017	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F018	*< 0.057*	*< 0.057*	*< 0.057*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F019	*< 0.12*	*< 0.12*	*< 0.12*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F020	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F021	*< 0.036*	*< 0.036*	*< 0.036*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F022	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F023	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F024	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F025	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F026	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F027	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F028	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F029	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
F030	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*

Table 7. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.

SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Concentration of PCB Congeners in Sediment Porewater [4] ($ng_{PCB}/L_{Porewater}$)				
	203	**205**	**206**	**207**	**208**
Homolog	**Octa**	**Octa**	**Nona**	**Nona**	**Nona**
K_{fs} (L/L_{PDMS}) [1]	**31,226,788**	**37,542,856**	**84,047,986**	**113,377,614**	**113,377,614**
S (ng/L) [2]	**81**	**81**	**18**	**18**	**18**
F009	*NC*	*NC*	*NC*	*NC*	*NC*
F010	*NC*	*NC*	*NC*	*NC*	*NC*
F011	*NC*	*NC*	*NC*	*NC*	*NC*
F012	*NC*	*NC*	*NC*	*NC*	*NC*
F013	*< 0.011*	*< 0.012*	*NC*	*NC*	*NC*
F014	*< 0.0037*	*< 0.0042*	*< 0.02*	*NC*	*NC*
F015	*NC*	*NC*	*NC*	*NC*	*NC*
F016	*NC*	*NC*	*NC*	*NC*	*NC*
F017	*NC*	*NC*	*NC*	*NC*	*NC*
F018	*NC*	*NC*	*NC*	*NC*	*NC*
F019	*NC*	*NC*	*NC*	*NC*	*NC*
F020	*NC*	*NC*	*NC*	*NC*	*NC*
F021	*NC*	*NC*	*NC*	*NC*	*NC*
F022	*NC*	*NC*	*NC*	*NC*	*NC*
F023	*NC*	*NC*	*NC*	*NC*	*NC*
F024	*NC*	*NC*	*NC*	*NC*	*NC*
F025	*NC*	*NC*	*NC*	*NC*	*NC*
F026	*NC*	*NC*	*NC*	*NC*	*NC*
F027	*NC*	*NC*	*NC*	*NC*	*NC*
F028	*NC*	*NC*	*NC*	*NC*	*NC*
F029	*NC*	*NC*	*NC*	*NC*	*NC*
F030	*NC*	*NC*	*NC*	*NC*	*NC*

Notes:

1 K_{fs} (L/L_{PDMS}) is the Fiber PDMS-Solution Water Partition Coefficient (**Table 2**)
2 Approximate solubility limit (S) from **Table 2**.
3 Values from **Table 1**. All stations are located within the future reactive cap area.
4 Concentrations of freely dissolved PCBs in sediment porewater are calculated by adjusting the concentration of PCBs in PDMS to reflect concentrations at steady state using model-predicted CFs (**Table 6**), according to the following equation:

$$[PCB\ Congeners_{Sediment\ Porewater}] = \frac{CF \times [PCB\ Congeners_{PDMS}] \times 1{,}000{,}000 \mu L/L}{K_{fs}}$$

Concentrations for samples with poor relationships and/or negative initial CF values are calculated for demonstration purposes only.
5 NC = Not Calculated.
6 NC results were not calculated because conditions were insufficient to reach 1% of steady state, as described in **Table 6**.
7 PCB = polychlorobiphenyl
8 L = liter
9 PDMS = polydimethylsiloxane
10 ng = nanogram
11 µL = microliter

Table 8. Concentrations of Freely-dissolved PCB Homologs in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

				Concentration of PCB Homologs in Sediment Porewater [2] ($ng_{PCB}/L_{Porewater}$)									
Lab ID	Station ID [1]	Deployment Type [1]	Sample Type [1]	Mono	Di	Tri	Tetra	Penta	Hexa	Hepta	Octa	Nona	Total Tetra-Hexa PCBs
F009	B7	SeaRing	Sample	< 2	< 0.39	< 0.32	**0.04**	**0.025**	< 0.027	< 0.092	NC	NC	**0.065**
F010	B10	SeaRing	Sample	< 2	< 0.39	< 0.32	**0.032**	**0.07**	**0.017**	< 0.1	NC	NC	**0.12**
F011	B9	SeaRing	Sample	< 2	< 0.38	< 0.31	**0.025**	**0.018**	< 0.016	< 0.032	NC	NC	**0.043**
F012	B8	SeaRing	Sample	< 2	< 0.37	< 0.31	< 0.09	**0.027**	< 0.033	< 0.13	NC	NC	**0.027**
F013	B6	SeaRing	Sample	< 6.4	< 1.2	< 0.98	**2**	**1.3**	**0.096**	< 0.015	< 0.013	NC	**3.4**
F014	B4	SeaRing	Sample	< 1.4	< 0.27	< 0.22	< 0.06	< 0.019	< 0.0073	< 0.0037	< 0.0047	< 0.02	< 0.06
F015	B5	SeaRing	Sample	< 2.1	< 0.39	< 0.32	**0.33**	**0.16**	**0.032**	< 0.13	NC	NC	**0.52**
F016	B3	SeaRing	Sample	< 1.6	< 0.31	< 0.26	**0.13**	**0.042**	< 0.39	NC	NC	NC	**0.17**
F017	B3	SeaRing	Duplicate	< 3.1	< 0.6	< 0.49	< 0.15	< 0.074	< 0.19	NC	NC	NC	< 0.15
F018	B2	SeaRing	Sample	< 1.8	< 0.34	< 0.28	< 0.08	**0.083**	< 0.021	< 0.11	NC	NC	**0.083**
F019	B1	SeaRing	Sample	< 2.3	< 0.43	< 0.35	**0.052**	**0.049**	< 0.034	< 0.13	NC	NC	**0.1**
F020	B9	Core	Sample	< 1.6	< 0.3	< 0.25	**0.04**	< 0.038	< 0.11	NC	NC	NC	**0.04**
F021	B10	Core	Sample	< 2.9	< 0.55	< 0.45	**0.18**	< 0.046	< 0.024	< 0.052	NC	NC	**0.18**
F022	B4	Core	Sample	< 1.5	< 0.31	< 0.25	< 0.09	< 0.1	< 0.27	NC	NC	NC	< 0.09
F023	B7	Core	Sample	< 1.7	< 0.33	< 0.27	**0.051**	< 0.043	< 0.13	NC	NC	NC	**0.051**
F024	B1	Core	Duplicate	< 2.1	< 0.4	< 0.33	< 0.1	< 0.046	< 0.091	NC	NC	NC	< 0.1
F025	B1	Core	Sample	< 1.3	< 0.26	< 0.21	**0.05**	< 0.053	< 0.18	NC	NC	NC	**0.05**
F026	B3	Core	Sample	< 1.4	< 0.28	< 0.23	< 0.082	< 0.081	< 0.39	NC	NC	NC	< 0.082
F027	B5	Core	Sample	< 2.4	< 0.51	< 0.43	**1.1**	**1.9**	NC	NC	NC	NC	**3**
F028	B2	Core	Sample	< 1.8	< 0.35	< 0.28	< 0.085	< 0.037	< 0.048	< 0.16	NC	NC	< 0.085
F029	B8	Core	Sample	< 1.7	< 0.34	< 0.28	**0.32**	**0.63**	**0.51**	NC	NC	NC	**1.5**
F030	B6	Core	Sample	< 1.3	< 0.26	< 0.22	**1.4**	**2**	**1.8**	NC	NC	NC	**5.2**
Average Method Detection Limit for Non-Detect Results				1.30	0.32	0.17	0.08	0.055	0.078	0.059	0.0081	0.02	

Notes:

1 Values from **Table 1**. All stations are located within the future reactive cap area.

2 The concentration of PCB Homologs in each sample are calculated as the sum of the detected PCB congeners (**Table 7**). If no congeners were detected, the maximum detection limit for the congeners within the homolog group is reported. If no PCB congeners were detected in any of the homolog groups, the detection limit for the Tetra PCB congener was used in the "Total Tetra-Hexa PCBs" column.

3 ng = nanogram

4 L = liter

5 PCB = polychlorobiphenyl

6 NC = Not Calculated

7 NC results were not calculated because conditions were insufficient to reach 1% of steady state, as described in**Table 6**.

Table 1. SPME Fiber Measurements for the 10-Month Monitoring Event.
SPAWAR Systems Center Pacific
San Diego, California

Hexane Extract Vial Number	Sample ID	Station ID	Sample Type	Total Fiber Length (cm)	Sample Processing Date	Percent Recovery
12-1	B12-1-MM-SPME-Core	B12-1-MM	Core	150.3	9/4/2013	100%
12-2	B12-2-MM-SPME-Core	B12-2-MM	Core	135.7	9/4/2013	90%
12-3	B12-3-MM-SPME-Core	B12-3-MM	Core	142.2	9/4/2013	95%
12-4	B12-4-MM-SPME-Core	B12-4-MM	Core	132.9	9/4/2013	89%
12-5 [1]	B12-5-MM-SPME-Core	B12-5-MM	Core	46.6	9/4/2013	31%
12-6	B12-6-MM-SPME-Core	B12-6-MM	Core	150.2	9/4/2013	100%
12-7	B12-7-MM-SPME-Core	B12-7-MM	Core	149.8	9/4/2013	100%
12-8	B12-8-MM-SPME-Core	B12-8-MM	Core	146.5	9/4/2013	98%
12-9	B12-9-MM-SPME-Core	B12-9-MM	Core	162.6	9/4/2013	108%
12-10	B12-10-MM-SPME-Core	B12-10-MM	Core	148.2	9/4/2013	99%
12-11	B12-1-MM-SPME-SR	B12-1-MM	SEA Ring	145.1	9/4/2013	97%
12-12	B12-2-MM-SPME-SR	B12-2-MM	SEA Ring	149.4	9/4/2013	100%
12-13	B12-3-MM-SPME-SR	B12-3-MM	SEA Ring	150.2	9/4/2013	100%
12-14	B12-4-MM-SPME-SR	B12-4-MM	SEA Ring	160.4	9/4/2013	107%
12-15	B12-5-MM-SPME-SR	B12-5-MM	SEA Ring	149.7	9/4/2013	100%
12-16	B12-6-MM-SPME-SR	B12-6-MM	SEA Ring	150	9/4/2013	100%
12-17	B12-7-MM-SPME-SR	B12-7-MM	SEA Ring	149.1	9/4/2013	99%
12-18	B12-8-MM-SPME-SR	B12-8-MM	SEA Ring	149.7	9/4/2013	100%
12-19	B12-9-MM-SPME-SR	B12-9-MM	SEA Ring	148.4	9/4/2013	99%
12-20	B12-10-MM-SPME-SR	B12-10-MM	SEA Ring	149.8	9/4/2013	100%
12-21	Fridge Blank 1	NA	Fridge Blank	150	9/4/2013	100%
12-22	Fridge Blank 2	NA	Fridge Blank	149.8	9/4/2013	100%
12-23	Fridge Blank 3	NA	Fridge Blank	149.8	9/4/2013	100%
12-24	Trip Blank 1	NA	Trip Blank	148.9	7/30/2013	99%
12-25	Trip Blank 2	NA	Trip Blank	148.8	7/31/2013	99%
12-26	Trip Blank 3	NA	Trip Blank	149.3	8/1/2013	100%

Notes:

[1] SPME Envelope was bent around outside of core tube. Most of fiber was pulverized.

[2] Samples were processed at Space and Naval Warfare Systems Center Pacific (SSC Pacific) in Point Loma by Jason Conder and Melissa Grover (ENVIRON) and Victoria Kirtay (SSC Pacific) with the exception of the trip blanks which were processed by Victoria Kirtay.

[3] For the SEA Ring Samples, in the field, aluminum foil was wrapped around the SPME envelopes retrieved from the SEA Ring and placed in Ziploc bags until processing. The aluminum foil fused to the steel mesh envelope in several places on each envelope. Aluminum foil seemed degraded and had salt crystals present.

[4] SPME = solid phase microextraction

[5] cm = centimeter

[6] NA = not applicable

Table 2. SPME Envelope Sediment Contact Measurements.
SPAWAR Systems Center Pacific
San Diego, California

Sample ID	Depth of Sediment in Core (cm)	Length of Envelope Below Sediment Surface (cm)	Length of Envelope Above Sediment Surface (cm)	Percent of Envelope Below Sediment Surface	Sample Notes
B12-1-MM-SPME-SR	5.5	5.5	8.5	39%	
B12-2-MM-SPME-SR	6	6	8	43%	
B12-3-MM-SPME-SR	6	6	8	43%	
B12-4-MM-SPME-SR	6	6	8	43%	
B12-5-MM-SPME-SR	15	14	0	100%	
B12-6-MM-SPME-SR	8.5	8.5	5.5	61%	Rocks may have bent
B12-7-MM-SPME-SR	10	10	4	71%	
B12-8-MM-SPME-SR	4	4	10	29%	
B12-9-MM-SPME-SR	6	6	8	43%	
B12-10-MM-SPME-SR	16	14	0	100%	
B12-1-MM-SPME-Core	5	5	10	36%	
B12-2-MM-SPME-Core	20.8	14	0	100%	
B12-3-MM-SPME-Core	8.5	8.5	6.2	61%	
B12-4-MM-SPME-Core	17	14	0	100%	
B12-5-MM-SPME-Core	7	7	8.5	50%	When retrieved, envelope was outside the core liner and bent
B12-6-MM-SPME-Core	10	10	6.5	71%	
B12-7-MM-SPME-Core	11.5	11.5	4.5	82%	
B12-8-MM-SPME-Core	3	3	12	21%	Squid trapped in core
B12-9-MM-SPME-Core	6.5	6.5	9	46%	
B12-10-MM-SPME-Core	7.5	7.5	9.5	54%	

Notes:

1 The length of the envelope was not measured. The length of the envelope is assumed to be 14 cm.

2 Depth of sediment in core was measured in the field upon retrieval. For the SPME samples in SEA Ring chambers, depth of sediment was measured by associates from SPAWAR (Renee) and AMEC (Kelly). For SPME samples in separately deployed in core liners, the depth of sediment in the core liner was measured by Jason Conder and Melissa Grover (ENVIRON).

3 Length of envelope below sediment surface was not measured. It is assumed to be equal to the depth of sediment. If the depth of sediment exceeds 14 cm, the length of envelope below the sediment surface is assumed to be 14 cm.

4 For the SPME samples in the SEA Ring chambers, length of envelope above the sediment surface was estimated based on the assumed envelope length of 14 cm. For the SPME samplers deployed outside of the SEA Ring in core liners, the length of envelope above the sediment surface was measured in the field.

5 Percent of envelope below sediment surface is calculated as the length of envelope below sediment surface divided by the assumed length of envelope (14 cm).

6 SPME SEA Ring Chambers contained worms although worm recovery was poor.

7 For the SPME samplers deployed outside of the SEA Ring in core liners, the sediment was emptied from each core liner into a Ziploc bag and archived at SSC Pacific, Point Loma.

8 SPME = solid phase microextraction

9 cm = centimeter

Table 3. Details for 10-Month SPME Sampling Event.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Station ID	Hexane Extract Vial Number	Sample ID	Sample Type
12-1	B12-1-MM	12-1	B12-1-MM-SPME-Core	Core
12-2	B12-2-MM	12-2	B12-2-MM-SPME-Core	Core
12-3	B12-3-MM	12-3	B12-3-MM-SPME-Core	Core
12-4	B12-4-MM	12-4	B12-4-MM-SPME-Core	Core
12-5	B12-5-MM	12-5	B12-5-MM-SPME-Core	Core
12-6	B12-6-MM	12-6	B12-6-MM-SPME-Core	Core
12-7	B12-7-MM	12-7	B12-7-MM-SPME-Core	Core
12-8	B12-8-MM	12-8	B12-8-MM-SPME-Core	Core
12-9	B12-9-MM	12-9	B12-9-MM-SPME-Core	Core
12-10	B12-10-MM	12-10	B12-10-MM-SPME-Core	Core
12-11	B12-1-MM	12-11	B12-1-MM-SPME-SR	SEA Ring
12-12	B12-2-MM	12-12	B12-2-MM-SPME-SR	SEA Ring
12-13	B12-3-MM	12-13	B12-3-MM-SPME-SR	SEA Ring
12-14	B12-4-MM	12-14	B12-4-MM-SPME-SR	SEA Ring
12-15	B12-5-MM	12-15	B12-5-MM-SPME-SR	SEA Ring
12-16	B12-6-MM	12-16	B12-6-MM-SPME-SR	SEA Ring
12-17	B12-7-MM	12-17	B12-7-MM-SPME-SR	SEA Ring
12-18	B12-8-MM	12-18	B12-8-MM-SPME-SR	SEA Ring
12-19	B12-9-MM	12-19	B12-9-MM-SPME-SR	SEA Ring
12-20	B12-10-MM	12-20	B12-10-MM-SPME-SR	SEA Ring
12-21	NA	12-21	Fridge Blank 1	Fridge Blank
12-22	NA	12-22	Fridge Blank 2	Fridge Blank
12-23	NA	12-23	Fridge Blank 3	Fridge Blank
12-24	NA	12-24	Trip Blank 1	Trip Blank
12-25	NA	12-25	Trip Blank 2	Trip Blank
12-26	NA	12-26	Trip Blank 3	Trip Blank

Notes:

1 Sample location descriptions for the 10-Month sampling event were provided by Robert Johnston, SPAWAR via email on August 15, 2013.

2 SPMEs were deployed July 23 and 24, 2013 and retrieved August 6 and 7, 2013.

3 Samples were processed at Space and Naval Warfare Systems Center Pacific (SSC Pacific) in Point Loma by Jason Conder (ENVIRON), Melissa Grover (ENVIRON) and Victoria Kirtay (SSC Pacific) on September 4, 2013.

4 Stations are located within the reactive cap area.

5 SPME = solid phase microextraction

6 NA = not applicable

7 cm = centimeter

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-1	2051-60-7	Mono	4.23	16,982	16,388	2.48	2,480,000	Planar	
PCB-3	2051-62-9	Mono	4.87	74,131	71,536	2.48	2,480,000	Planar	
PCB-5	16605-91-7	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-6	25569-80-6	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-7	33284-50-3	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-8	34883-43-7	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-9	34883-39-1	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-12	2974-92-7	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-13	2974-90-5	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-14	34883-41-5	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-15	2050-68-2	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-16	38444-78-9	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-17	37680-66-3	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-18	37680-65-2	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-19	38444-73-4	Tri	5.05	112,202	108,275	0.13991	139,910	Non-planar	
PCB-20	38444-84-7	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-22	38444-85-8	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-24	55702-45-9	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-25	55712-37-3	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-26	38444-81-4	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-27	38444-76-7	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-28	7012-37-5	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-29	15862-07-4	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	Performance Reference Compound [5]
PCB-31	16606-02-3	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-32	38444-77-8	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-33	38444-86-9	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-34	37680-68-5	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-35	37680-69-6	Tri	5.69	489,779	472,637	0.13991	139,910	Planar	
PCB-37	38444-90-5	Tri	5.69	489,779	472,637	0.13991	139,910	Planar	
PCB-40	38444-93-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-41	52663-59-9	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-42	36559-22-5	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-44	41464-39-5	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-45	70362-45-7	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-46	41464-47-5	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-47	2437-79-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-48	70362-47-9	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-49	41464-40-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-51	68194-04-7	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-52	35693-99-3	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-53	41464-41-9	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-54	15968-05-5	Tetra	5.66	457,088	441,090	0.032245	32,245	Non-planar	
PCB-56	41464-43-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-59	74472-33-6	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-60	33025-41-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-63	74472-34-7	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-64	52663-58-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-66	32598-10-0	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-67	73575-53-8	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-69	60233-24-1	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	Performance Reference Compound [5]
PCB-70	32598-11-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-71	41464-46-4	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-73	74338-23-1	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-74	32690-93-0	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-75	32598-12-2	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-77	32598-13-3	Tetra	6.10	1,258,925	1,214,863	0.032245	32,245	Planar	
PCB-81	70362-50-4	Tetra	6.10	1,258,925	1,214,863	0.032245	32,245	Planar	
PCB-82	52663-62-4	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-83	60145-20-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-84	52663-60-2	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-85	65510-45-4	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-87	38380-02-8	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-90/101	68194-07-0/ 37680-73-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-91	68194-05-8	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-92	52663-61-3	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-93	73575-56-1	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-95	38379-99-6	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-97	41464-51-1	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-99	38380-01-7	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-100	39485-83-1	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-101	37680-73-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-103	60145-21-3	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-104	56558-16-8	Penta	6.20	1,584,893	1,529,422	0.0073282	7,328	Non-planar	Performance Reference Compound [5]
PCB-105	32598-14-4	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-107	70424-68-9	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-110	38380-03-9	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-114	74472-37-0	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-115	74472-38-1	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-117	68194-11-6	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-118	31508-00-6	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-119	56558-17-9	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-122	76842-07-4	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-123	65510-44-3	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-124	70424-70-3	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-126	57465-28-8	Penta	6.52	3,311,311	3,195,415	0.0073282	7,328	Planar	
PCB-128	38380-07-3	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-129	55215-18-4	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-130	52663-66-8	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-131	61798-70-7	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-132	38380-05-1	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-134	52704-70-8	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-135	52744-13-5	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-136	38411-22-2	Hexa	6.70	5,011,872	4,836,457	0.0016469	1,647	Non-planar	
PCB-137	35694-06-5	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-138	35065-28-2	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-141	52712-04-6	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-144	68194-14-9	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-146	51908-16-8	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-147	68194-13-8	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-149	38380-04-0	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-151	52663-63-5	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-153	35065-27-1	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-154	60145-22-4	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	Performance Reference Compound [5]
PCB-156	38380-08-4	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-157	69782-90-7	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-158	74472-42-7	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-163	74472-44-9	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-164	74472-45-0	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-165	74472-46-1	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-167	52663-72-6	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-169	32774-16-6	Hexa	6.93	8,511,380	8,213,482	0.0016469	1,647	Planar	
PCB-170	35065-30-6	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-171	52663-71-5	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-172	52663-74-8	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-173	68194-16-1	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-174	38411-25-5	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-175	40186-70-7	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-176	52663-65-7	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-177	52663-70-4	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-178	52663-67-9	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-179	52663-64-6	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-180	35065-29-3	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-183	52663-69-1	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-184	74472-48-3	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-185	52712-05-7	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-187	52663-68-0	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-189	39635-31-9	Hepta	7.25	17,782,794	17,160,396	0.00036674	367	Planar	
PCB-190	41411-64-7	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-191	74472-50-7	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-193	69782-91-8	Hepta	7.15	14,125,375	13,630,987	0.000366740	367	Non-planar	
PCB-194	35694-08-7	Octa	7.59	38,904,514	37,542,856	0.000081049	81	Non-planar	
PCB-195	52663-78-2	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-196	42740-50-1	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-197	33091-17-7	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-199	52663-75-9	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-200	52663-73-7	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-201	40186-71-8	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-202	2136-99-4	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-203	52663-76-0	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-205	74472-53-0	Octa	7.59	38,904,514	37,542,856	0.000081049	81	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-206	40186-72-9	Nona	7.94	87,096,359	84,047,986	0.000017797	18	Non-planar	
PCB-207	52663-79-3	Nona	8.07	117,489,755	113,377,614	0.000017797	18	Non-planar	
PCB-208	52663-77-1	Nona	8.07	117,489,755	113,377,614	0.000017797	18	Non-planar	
PCB-209	2051-24-3	Deca	8.51	323,593,657	312,267,879	0.0000038862	4	Non-planar	Spike Recovery Standard [6]

Notes:

1 Log K_{fs} = Log_{10} Fiber PDMS-Solution Partition Coefficient. Referenced from Smedes et al. 2009.
2 K_{fs} = Fiber PDMS-Solution Water Partition Coefficient
3 Converted L with the density of PDMS = 0.965 kg/L
4 S = Solubility Limit in Water. Predicted using EpiWin.
5 All SPMEs were loaded with Performance Reference Compounds (24-h tumble in 900 mL 80:20 methanol:MQ water solution (0.2 µg/mL)) prior to deployment.
6 Spike recovery standard added to 1.8-mL extracts prior to pre-concentration; used to correct for PCB loss during pre-concentration step.
7 PCB = polychlorobiphenyl
8 SPME = solid phase microextraction
9 PDMS = polydimethylsiloxane
10 L = liter
11 kg = kilogram
12 ng = nanogram
13 mg = milligram

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

		Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																											
Lab ID	**Sample ID**	**1**	**3**	**5**	**6**	**7**	**8**	**9**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**29**	**31**	**32**	**33**	**34**	**35**
12-1	B12-1-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.53**	*ND*	*ND*	*ND*	*ND*	*ND*
12-2	B12-2-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.86**	*ND*	*ND*	*ND*	*ND*	*ND*
12-3	B12-3-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.30**	*ND*	*ND*	*ND*	*ND*	*ND*
12-4	B12-4-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.31**	*ND*	*ND*	*ND*	*ND*	*ND*
12-5	B12-5-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.69**	*ND*	*ND*	*ND*	*ND*	*ND*
12-6	B12-6-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.17**	*ND*	*ND*	*ND*	*ND*	*ND*
12-7	B12-7-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.33**	*ND*	*ND*	*ND*	*ND*	*ND*
12-8	B12-8-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.16**	*ND*	*ND*	*ND*	*ND*	*ND*
12-9	B12-9-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.50**	*ND*	*ND*	*ND*	*ND*	*ND*
12-10	B12-10-MM-SPME-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.50**	*ND*	*ND*	*ND*	*ND*	*ND*
12-11	B12-1-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**4.52**	*ND*	*ND*	*ND*	*ND*	*ND*
12-12	B12-2-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**3.70**	*ND*	*ND*	*ND*	*ND*	*ND*
12-13	B12-3-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**8.17**	*ND*	*ND*	*ND*	*ND*	*ND*
12-14	B12-4-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**3.59**	*ND*	*ND*	*ND*	*ND*	*ND*
12-15	B12-5-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.70**	*ND*	*ND*	*ND*	*ND*	*ND*
12-16	B12-6-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.39**	*ND*	*ND*	*ND*	*ND*	*ND*
12-17	B12-7-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.71**	*ND*	*ND*	*ND*	*ND*	*ND*
12-18	B12-8-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.87**	*ND*	*ND*	*ND*	*ND*	*ND*
12-19	B12-9-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.20**	*ND*	*ND*	*ND*	*ND*	*ND*
12-20	B12-10-MM-SPME-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.57**	*ND*	*ND*	*ND*	*ND*	*ND*
12-21	Fridge Blank 1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**7.57**	*ND*	*ND*	*ND*	*ND*	*ND*
12-22	Fridge Blank 2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**18.40**	*ND*	*ND*	*ND*	*ND*	*ND*
12-23	Fridge Blank 3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**20.30**	*ND*	*ND*	*ND*	*ND*	*ND*
12-24	Trip Blank 1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.33**	*ND*	*ND*	*ND*	*ND*	*ND*
12-25	Trip Blank 2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.20**	*ND*	*ND*	*ND*	*ND*	*ND*
12-26	Trip Blank 3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.42**	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																														
Lab ID	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**	**67**	**69**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**
12-1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**2.61**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.92**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**9.51**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.90**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**2.46**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**9.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**3.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.89**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**4.82**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**9.89**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-11	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.16**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**2.86**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**10.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**6.29**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**4.78**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.54**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.23**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.73**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**6.69**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**6.79**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**17.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**18.70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**6.30**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																															
Lab ID	**85**	**87**	**90/101**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**101**	**103**	**104**	**105**	**107**	**110**	**114**	**115**	**117**	**118**	**119**	**122**	**123**	**124**	**126**	**128**	**129**	**130**	**131**	**132**	**134**	**135**
12-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.52**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.52**	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.95**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.32**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3.21**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.67**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.36**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.00**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.49**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10.40**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.17**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3.94**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.56**	**0.11**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.05**	ND	ND
12-14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.42**	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND
12-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.29**	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.40**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.22**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.55**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3.69**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-20	ND	ND	**0.06**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.91**	**0.08**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.74**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13.30**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**16.10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.60**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.44**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.60**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																			
Lab ID	136	137	138	141	144	146	147	149	151	153	154	156	157	158	163	164	165	167	169	170
12-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.19	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.60	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.90	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.20	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.20	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.50	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.60	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.40	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.30	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	18.20	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.09	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.41	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-13	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	15.20	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.80	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15.70	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.10	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15.60	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.90	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.20	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-20	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.08	13.60	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.47	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	25.70	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	25.80	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.74	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.67	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.80	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																													
	171	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**184**	**185**	**187**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**	**202**	**203**	**205**	**206**	**207**	**208**
12-1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.14**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.17**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-11	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.07**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.14**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.16**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.13**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Internal Spike Standard Recovery (%)	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																												
Lab ID	**209**	**1**	**3**	**5**	**6**	**7**	**8**	**9**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**29**	**31**	**32**	**33**	**34**	**35**	**37**
12-1	**35.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.51**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-2	**77.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-3	**68.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**7.79**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-4	**62.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-5	**60.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.14**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-6	**61.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**8.41**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-7	**58.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.57**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-8	**72.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.22**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-9	**67.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.74**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-10	**70.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.71**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-11	**29.30**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**15.43**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-12	**24.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**15.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-13	**62.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**13.07**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-14	**57.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**6.24**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-15	**51.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.37**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-16	**57.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.68**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-17	**64.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-18	**50.00**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.74**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-19	**48.55**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.41**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-20	**49.85**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**3.15**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-21	**39.15**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**19.34**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-22	**58.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**31.45**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-23	**55.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**36.58**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-24	**no surr**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.33**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-25	**36.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**14.13**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-26	**no surr**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.42**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																														
Lab ID	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**	**67**	**69**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**
12-1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**7.46**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**2.48**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**13.99**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**3.04**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**4.07**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**14.68**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**5.23**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**2.61**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**7.19**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**14.13**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-11	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**17.61**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**11.67**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**16.64**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**10.94**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**9.37**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**2.98**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**8.59**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**10.46**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**13.42**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**17.34**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**29.23**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**33.69**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**17.12**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**1.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																														
Lab ID	**87**	**90/101**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**101**	**103**	**104**	**105**	**107**	**110**	**114**	**115**	**117**	**118**	**119**	**122**	**123**	**124**	**126**	**128**	**129**	**130**	**131**	**132**	**134**	**135**	**136**
12-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**12.91**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.41**	**0.07**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13.16**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.51**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.31**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14.10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**12.58**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.28**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**12.67**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14.86**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**17.65**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**16.08**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**15.30**	**0.18**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.08**	ND	ND	ND
12-14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**16.38**	ND	ND	ND	ND	ND	ND	**0.17**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.06**	ND	ND	ND
12-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**16.25**	**0.11**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**11.23**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**12.74**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13.10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.60**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-20	ND	**0.11**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13.86**	**0.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14.66**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**22.74**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**29.01**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.60**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14.78**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.60**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																														
Lab ID	137	138	141	144	146	147	149	151	153	154	156	157	158	163	164	165	167	169	170	171	172	173	174	175	176	177	178	179	180	183	184	185
12-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	23.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	21.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	23.58	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-7	ND	ND	ND	ND	ND	ND	ND	ND	ND	24.96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	19.86	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-9	ND	ND	ND	ND	ND	ND	ND	ND	ND	25.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	26.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	27.61	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	26.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-13	ND	ND	ND	ND	ND	ND	ND	ND	0.24	24.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-14	ND	ND	ND	ND	ND	ND	ND	ND	ND	22.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.78	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-17	ND	ND	ND	ND	ND	ND	ND	ND	ND	24.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-18	ND	ND	ND	ND	ND	ND	ND	ND	ND	27.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-19	ND	ND	ND	ND	ND	ND	ND	ND	ND	23.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-20	ND	ND	ND	ND	ND	ND	ND	ND	0.16	27.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	24.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-22	ND	ND	ND	ND	ND	ND	ND	ND	ND	43.93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.74	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-25	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.84	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																	
Lab ID	**187 [4]**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**	**202**	**203**	**205**	**206**	**207**	**208**
12-1	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-2	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-3	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-4	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-5	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-6	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-7	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-8	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-9	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-10	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-11	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-12	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-13	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-14	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-15	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-16	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-17	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-18	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-19	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-20	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-21	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-22	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-23	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-24	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-25	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
12-26	*NC*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Notes:

1 Results from analysis by Engineer Research and Development Center (ERDC) were provided on 11/05/13. Total mass of the PCB congener is given per fibers in each sample.

2 Masses of PCB congeners extracted from the fibers are corrected for the percent recovery of the internal recovery standard using the following equation:

$$\textit{Corrected PCB Mass} = \frac{\textit{Uncorrected PCB Mass}}{(\textit{Internal Spike Standard} \div 100\%)}$$

3 Reporting limit is 0.1 ng (uncorrected PCB congener mass per fiber).

4 It should be noted that PCB-187 was detected in all three fridge blanks and one of three trip blanks. However, fridge and trip blanks were spiked with four PRCs (PCBs-29, 69, 104, and154) which did not include PCB-187. Detection of PCB-187 is likely spurious and due to either an analytical artifact or contamination in the process. Concentrations of PCB-187 have not been calculated.

5 If Internal Spike Standard Recovery was noted as "no surr", the mass was not corrected.

6 PCB = polychlorobiphenyl

7 SPME = solid phase microextraction

8 ND = not detected

9 PRC = performance reference compound

10 ng = nanogram

11 NC = not calculated

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Lab ID	Sample ID	Length Processed [1] (cm)	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)												
			1	3	5	6	7	8	9	12	13	14	15	16	17
12-1	B12-1-MM-SPME-Core	150.3	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-2	B12-2-MM-SPME-Core	135.7	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-3	B12-3-MM-SPME-Core	142.2	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-4	B12-4-MM-SPME-Core	132.9	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-5	B12-5-MM-SPME-Core	46.6	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*
12-6	B12-6-MM-SPME-Core	150.2	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-7	B12-7-MM-SPME-Core	149.8	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-8	B12-8-MM-SPME-Core	146.5	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-9	B12-9-MM-SPME-Core	162.6	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-10	B12-10-MM-SPME-Core	148.2	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-11	B12-1-MM-SPME-SR	145.1	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-12	B12-2-MM-SPME-SR	149.4	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-13	B12-3-MM-SPME-SR	150.2	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-14	B12-4-MM-SPME-SR	160.4	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-15	B12-5-MM-SPME-SR	149.7	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-16	B12-6-MM-SPME-SR	150.0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-17	B12-7-MM-SPME-SR	149.1	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-18	B12-8-MM-SPME-SR	149.7	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-19	B12-9-MM-SPME-SR	148.4	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-20	B12-10-MM-SPME-SR	149.8	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-21	Fridge Blank 1	150.0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-22	Fridge Blank 2	149.8	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-23	Fridge Blank 3	149.8	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-24	Trip Blank 1	148.9	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-25	Trip Blank 2	148.8	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-26	Trip Blank 3	149.3	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Lab ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																
	18	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**29**	**31**	**32**	**33**	**34**	**35**	**37**	**40**
12-1	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.15**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-2	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.12**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-3	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.79**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-4	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.05**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-5	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	**0.35**	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*
12-6	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.81**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-7	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.05**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-8	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.02**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-9	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.07**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-10	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.07**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-11	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**1.54**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-12	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**1.46**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-13	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**1.26**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-14	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.56**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-15	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.13**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-16	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.07**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-17	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.11**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-18	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.17**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-19	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.04**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-20	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.30**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-21	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**1.87**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-22	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**3.04**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-23	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**3.53**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-24	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.13**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-25	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**1.37**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-26	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.14**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																
Lab ID	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**
12-1	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-2	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-3	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-4	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-5	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*
12-6	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-7	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-8	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-9	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-10	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-11	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-12	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-13	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-14	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-15	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-16	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-17	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-18	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-19	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-20	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-21	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-22	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-23	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-24	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-25	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-26	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																
Lab ID	**66**	**67**	**69**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**	**87**	**90/101**	**91**
12-1	*< 0.01*	*< 0.01*	**0.72**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-2	*< 0.01*	*< 0.01*	**0.26**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-3	*< 0.01*	*< 0.01*	**1.42**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-4	*< 0.01*	*< 0.01*	**0.33**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-5	*< 0.03*	*< 0.03*	**1.26**	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*
12-6	*< 0.01*	*< 0.01*	**1.42**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-7	*< 0.01*	*< 0.01*	**0.51**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-8	*< 0.01*	*< 0.01*	**0.26**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-9	*< 0.01*	*< 0.01*	**0.64**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-10	*< 0.01*	*< 0.01*	**1.38**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-11	*< 0.01*	*< 0.01*	**1.76**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-12	*< 0.01*	*< 0.01*	**1.13**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-13	*< 0.01*	*< 0.01*	**1.60**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-14	*< 0.01*	*< 0.01*	**0.99**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-15	*< 0.01*	*< 0.01*	**0.91**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-16	*< 0.01*	*< 0.01*	**0.29**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-17	*< 0.01*	*< 0.01*	**0.83**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-18	*< 0.01*	*< 0.01*	**1.01**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-19	*< 0.01*	*< 0.01*	**0.15**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-20	*< 0.01*	*< 0.01*	**1.30**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.01**	*< 0.01*
12-21	*< 0.01*	*< 0.01*	**1.67**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-22	*< 0.01*	*< 0.01*	**2.82**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-23	*< 0.01*	*< 0.01*	**3.26**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-24	*< 0.01*	*< 0.01*	**0.17**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-25	*< 0.01*	*< 0.01*	**1.67**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-26	*< 0.01*	*< 0.01*	**0.17**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)															
	92	93	95	97	99	100	101	103	104	105	107	110	114	115	117	118	119
12-1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.24**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.90**	**0.01**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-3	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.34**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-4	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.93**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-5	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	**1.65**	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
12-6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.36**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-7	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.22**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.82**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-9	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.13**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.45**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-11	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.76**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-12	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.56**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-13	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.47**	**0.02**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-14	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.48**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.02**	< 0.01
12-15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.57**	**0.01**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-16	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.08**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-17	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.24**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-18	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.27**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.74**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-20	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.34**	**0.01**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-21	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.41**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-22	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**2.20**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-23	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**2.80**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.16**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-25	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1.44**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-26	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.16**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																
	122	123	124	126	128	129	130	131	132	134	135	136	137	138	141	144	146
12-1	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-2	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-3	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-4	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-5	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*
12-6	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-7	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-8	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-9	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-10	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-11	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-12	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-13	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.01**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-14	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	**0.01**	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-15	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-16	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-17	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-18	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-19	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-20	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-21	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-22	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-23	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-24	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-25	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
12-26	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																
	147	149	151	153	154	156	157	158	163	164	165	167	169	170	171	172	173
12-1	< 0.01	< 0.01	< 0.01	< 0.01	**2.25**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-2	< 0.01	< 0.01	< 0.01	< 0.01	**1.87**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-3	< 0.01	< 0.01	< 0.01	< 0.01	**2.23**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-4	< 0.01	< 0.01	< 0.01	< 0.01	**1.95**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-5	< 0.03	< 0.03	< 0.03	< 0.03	**3.18**	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
12-6	< 0.01	< 0.01	< 0.01	< 0.01	**2.27**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-7	< 0.01	< 0.01	< 0.01	< 0.01	**2.41**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-8	< 0.01	< 0.01	< 0.01	< 0.01	**1.96**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-9	< 0.01	< 0.01	< 0.01	< 0.01	**2.30**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-10	< 0.01	< 0.01	< 0.01	< 0.01	**2.54**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-11	< 0.01	< 0.01	< 0.01	< 0.01	**2.75**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-12	< 0.01	< 0.01	< 0.01	< 0.01	**2.54**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-13	< 0.01	< 0.01	< 0.01	**0.02**	**2.34**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-14	< 0.01	< 0.01	< 0.01	< 0.01	**2.01**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-15	< 0.01	< 0.01	< 0.01	< 0.01	**2.98**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-16	< 0.01	< 0.01	< 0.01	< 0.01	**2.90**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-17	< 0.01	< 0.01	< 0.01	< 0.01	**2.35**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-18	< 0.01	< 0.01	< 0.01	< 0.01	**2.69**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-19	< 0.01	< 0.01	< 0.01	< 0.01	**2.25**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-20	< 0.01	< 0.01	< 0.01	**0.02**	**2.64**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-21	< 0.01	< 0.01	< 0.01	< 0.01	**2.33**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-22	< 0.01	< 0.01	< 0.01	< 0.01	**4.25**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-23	< 0.01	< 0.01	< 0.01	< 0.01	**4.49**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-24	< 0.01	< 0.01	< 0.01	< 0.01	**0.27**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-25	< 0.01	< 0.01	< 0.01	< 0.01	**2.03**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-26	< 0.01	< 0.01	< 0.01	< 0.01	**0.27**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Lab ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																
	174	175	176	177	178	179	180	183	184	185	187 [3]	189	190	191	193	194	195
12-1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-3	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-4	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-5	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	NC	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
12-6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-7	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-9	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-11	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-12	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-13	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-14	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-16	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-17	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-18	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-20	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-21	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-22	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-23	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-25	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-26	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Lab ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)										
	196	197	199	200	201	202	203	205	206	207	208
12-1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-3	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-4	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-5	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
12-6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-7	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-9	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-11	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-12	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-13	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-14	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-16	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-17	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-18	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-20	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-21	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-22	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-23	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-25	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-26	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

1 Values from **Table 1**
2 Concentrations of PCB Congeners are calculated as the corrected total mass of PCB congeners divided by the volume of SPME fiber, assuming 0.06908 $\mu L / cm_{PDMS}$.
3 Concentration of PCB-187 was not calculated (**Table 5**)
4 SPME = solid phase microextraction
5 cm = centimeter
6 ng = nanogram
7 µL = microliter
8 PDMS = polydimethylsiloxane
9 PCB = polychlorobiphenyl
10 NC = not calculated

Table 7. Correction Factors for Performance Reference Compounds and Derivation of Regression Models to Predict Correction Factors for other PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

		Concentration of PCB Performance Reference Compounds in PDMS ($ng_{PCB}/\mu L_{PDMS}$) (Table 6)				Initial Correction Factors by PCB Homolog [1, 2, 3]				Log_{10} Correction Factors Used for Regression				Regression Model for Log_{10} CF on K_{fs} [4]			Model-predicted CF ÷ Observed CF for PRCs					Percent of Steady State Reached [5]			
Lab ID	**Sample ID**	**29 (Tri PRC)**	**69 (Tetra PRC)**	**104 (Penta PRC)**	**154 (Hexa PRC)**	**29 (Tri PRC)**	**69 (Tetra PRC)**	**104 (Penta PRC)**	**154 (Hexa PRC)**	**29 (Tri PRC)**	**69 (Tetra PRC)**	**104 (Penta PRC)**	**154 (Hexa PRC)**	**Slope**	**Y-intercept**	**r^2**	**29 (Tri PRC)**	**69 (Tetra PRC)**	**104 (Penta PRC)**	**154 (Hexa PRC)**	**Average**	**Tri**	**Tetra**	**Penta**	**Hexa**
12-1	B12-1-MM-SPME-Core	0.15	0.72	1.24	2.25	1.06	1.44	2.73	3.21	0.03	0.16	0.44	0.51	1.19E-07	0.09	0.75	1.26	1.01	0.69	1.13	1.02	94%	70%	37%	31%
12-2	B12-2-MM-SPME-Core	0.12	0.26	0.90	1.87	1.05	1.13	1.84	2.33	0.02	0.05	0.27	0.37	9.41E-08	0.03	0.86	1.08	1.07	0.81	1.07	1.01	95%	89%	54%	43%
12-3	B12-3-MM-SPME-Core	0.79	1.42	1.34	2.23	1.48	2.53	3.15	3.14	0.17	0.40	0.50	0.50	6.30E-08	0.29	0.45	1.38	0.84	0.78	1.10	1.03	68%	40%	32%	32%
12-4	B12-4-MM-SPME-Core	0.05	0.33	0.93	1.95	1.02	1.16	1.89	2.48	0.01	0.07	0.28	0.39	1.01E-07	0.03	0.87	1.11	1.05	0.80	1.07	1.01	98%	86%	53%	40%
12-5	B12-5-MM-SPME-Core	0.35	1.26	1.65	3.18	1.17	2.16	6.23	35.81	0.07	0.33	0.79	1.55	3.89E-07	0.07	0.97	1.31	0.92	0.74	1.11	1.02	86%	46%	16%	3%
12-6	B12-6-MM-SPME-Core	0.81	1.42	1.36	2.27	1.49	2.51	3.25	3.27	0.17	0.40	0.51	0.51	6.78E-08	0.29	0.49	1.37	0.86	0.77	1.11	1.03	67%	40%	31%	31%
12-7	B12-7-MM-SPME-Core	0.05	0.51	1.22	2.41	1.02	1.27	2.63	3.79	0.01	0.10	0.42	0.58	1.49E-07	0.04	0.85	1.19	1.06	0.71	1.12	1.02	98%	79%	38%	26%
12-8	B12-8-MM-SPME-Core	0.02	0.26	0.82	1.96	1.01	1.12	1.71	2.50	0.00	0.05	0.23	0.40	1.06E-07	0.00	0.93	1.07	1.04	0.85	1.05	1.00	99%	89%	58%	40%
12-9	B12-9-MM-SPME-Core	0.07	0.64	1.13	2.30	1.03	1.37	2.35	3.36	0.01	0.14	0.37	0.53	1.30E-07	0.06	0.86	1.21	0.99	0.76	1.10	1.01	97%	73%	43%	30%
12-10	B12-10-MM-SPME-Core	0.07	1.38	1.45	2.54	1.03	2.42	3.83	4.45	0.01	0.38	0.58	0.65	1.33E-07	0.20	0.59	1.67	0.78	0.65	1.18	1.07	97%	41%	26%	22%
12-11	B12-1-MM-SPME-SR	1.54	1.76	1.76	2.75	2.68	3.94	9.67	6.29	0.43	0.60	0.99	0.80	8.21E-08	0.57	0.31	1.47	1.06	0.52	1.25	1.07	37%	25%	10%	16%
12-12	B12-2-MM-SPME-SR	1.46	1.13	1.56	2.54	2.48	1.92	4.85	4.43	0.39	0.28	0.69	0.65	8.38E-08	0.37	0.51	1.00	1.36	0.65	1.13	1.04	40%	52%	21%	23%
12-13	B12-3-MM-SPME-SR	1.26	1.60	1.47	2.34	2.06	3.13	4.01	3.52	0.31	0.50	0.60	0.55	4.26E-08	0.42	0.31	1.32	0.89	0.77	1.11	1.02	49%	32%	25%	28%
12-14	B12-4-MM-SPME-SR	0.56	0.99	1.48	2.01	1.30	1.72	4.05	2.59	0.11	0.24	0.61	0.41	6.76E-08	0.24	0.27	1.39	1.09	0.54	1.23	1.06	77%	58%	25%	39%
12-15	B12-5-MM-SPME-SR	0.13	0.91	1.57	2.98	1.06	1.63	5.02	10.99	0.02	0.21	0.70	1.04	2.64E-07	0.08	0.89	1.34	1.04	0.60	1.18	1.04	95%	62%	20%	9%
12-16	B12-6-MM-SPME-SR	0.07	0.29	1.08	2.90	1.03	1.14	2.23	8.62	0.01	0.06	0.35	0.94	2.57E-07	-0.07	1.00	0.99	1.06	0.95	1.01	1.00	97%	88%	45%	12%
12-17	B12-7-MM-SPME-SR	0.11	0.83	1.24	2.35	1.05	1.55	2.70	3.53	0.02	0.19	0.43	0.55	1.28E-07	0.09	0.79	1.30	0.95	0.72	1.12	1.02	96%	65%	37%	28%
12-18	B12-8-MM-SPME-SR	0.17	1.01	1.27	2.69	1.07	1.75	2.82	5.58	0.03	0.24	0.45	0.75	1.76E-07	0.09	0.91	1.29	0.89	0.81	1.08	1.02	93%	57%	35%	18%
12-19	B12-9-MM-SPME-SR	0.04	0.15	0.74	2.25	1.02	1.07	1.61	3.20	0.01	0.03	0.21	0.50	1.39E-07	-0.03	0.99	1.00	1.05	0.94	1.02	1.00	98%	94%	62%	31%
12-20	B12-10-MM-SPME-SR	0.30	1.30	1.34	2.64	1.14	2.23	3.15	5.13	0.06	0.35	0.50	0.71	1.49E-07	0.17	0.80	1.42	0.81	0.79	1.10	1.03	88%	45%	32%	19%
Maximum [PRC in PDMS] for Core and SR Samples		1.54	1.76	1.76	3.18																Average	83%	61%	35%	26%
12-21	Fridge Blank 1	1.87	1.67	1.41	2.33																Standard Deviation	20%	21%	14%	11%
12-22	Fridge Blank 2	3.04	2.82	2.20	4.25																				
12-23	Fridge Blank 3	3.53	3.26	2.80	4.49																				
12-24	Trip Blank 1	0.13	0.17	0.16	0.27																				
12-25	Trip Blank 2	1.37	1.67	1.44	2.03																				
12-26	Trip Blank 3	0.14	0.17	0.16	0.27																				
Average Fridge Blanks and Trip Blank 2[2]		2.45	2.35	1.96	3.27																				

Notes:

1 $$CF = \frac{1}{\left(\frac{[PDMS_{t=0}] - [PDMS_{t=14}]}{[PDMS_{t=0}]}\right)}$$

2 $[PDMS]_{t=0}$ is the average concentration of PRCs in the fridge blanks and trip blank 2. Trip Blank 1 and 3 were not used in the average because of questionable and unacceptable analytical results, which included a lack of a surrogate standard and values that are approximately 10% of the maximum values for SPMEs exposed to sediment. Hypothetically, concentrations of PRCs in blanks should be greater than all site-deployed samples (although some measurement variation is tolerable).

3 $[PDMS]_{t=14}$ is the concentration of the PRC after 14 days in the sediment.

4 A linear regression model was developed from the observed relationship between Log_{10} of the Correction Factor and the fiber: water partition coefficient (K_{fs}, Table 4) for the four PRCs. Cells highlighted in red indicate a relationship that is not strong (r^2<0.8).

5 Calculated by Observed CF^{-1}

6 CF = correction factor

7 PCB = polychlorobiphenyl

8 PDMS = polydimethylsiloxane

9 ng = nanogram

10 µL = microliter

11 PRC = performance reference compound

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.

SPAWAR Systems Center Pacific

San Diego, California

Lab ID		Regression Model [2]		Model-predicted Correction Factors [3]									
Congener				1	3	5	6	7	8	9	12	13	14
Homolog				Mono	Mono	Di	Di	Di	Di	Di	Di	Di	Di
K_{fs} (L/L_{PDMS}) [1]	Sample ID	Slope	Y-intercept	16,388	71,536	88,009	88,009	88,009	88,009	88,009	183,877	183,877	183,877
12-1	B12-1-MM-SPME-Core	1.19E-07	0.09	1.25	1.27	1.27	1.27	1.27	1.27	1.27	1.3	1.3	1.3
12-2	B12-2-MM-SPME-Core	9.41E-08	0.03	1.07	1.08	1.09	1.09	1.09	1.09	1.09	1.11	1.11	1.11
12-3	B12-3-MM-SPME-Core	6.30E-08	0.29	1.96	1.98	1.98	1.98	1.98	1.98	1.98	2.01	2.01	2.01
12-4	B12-4-MM-SPME-Core	1.01E-07	0.03	1.07	1.08	1.08	1.08	1.08	1.08	1.08	1.11	1.11	1.11
12-5	B12-5-MM-SPME-Core	3.89E-07	0.07	1.2	1.26	1.28	1.28	1.28	1.28	1.28	1.39	1.39	1.39
12-6	B12-6-MM-SPME-Core	6.78E-08	0.29	1.97	1.98	1.99	1.99	1.99	1.99	1.99	2.02	2.02	2.02
12-7	B12-7-MM-SPME-Core	1.49E-07	0.04	1.11	1.13	1.14	1.14	1.14	1.14	1.14	1.17	1.17	1.17
12-8	B12-8-MM-SPME-Core	1.06E-07	0.00	1.01	1.03	1.03	1.03	1.03	1.03	1.03	1.06	1.06	1.06
12-9	B12-9-MM-SPME-Core	1.30E-07	0.06	1.14	1.16	1.17	1.17	1.17	1.17	1.17	1.2	1.2	1.2
12-10	B12-10-MM-SPME-Core	1.33E-07	0.20	1.58	1.6	1.61	1.61	1.61	1.61	1.61	1.66	1.66	1.66
12-11	B12-1-MM-SPME-SR	8.21E-08	0.57	3.74	3.78	3.8	3.8	3.8	3.8	3.8	3.86	3.86	3.86
12-12	B12-2-MM-SPME-SR	8.38E-08	0.37	2.35	2.38	2.38	2.38	2.38	2.38	2.38	2.43	2.43	2.43
12-13	B12-3-MM-SPME-SR	4.26E-08	0.42	2.65	2.66	2.67	2.67	2.67	2.67	2.67	2.69	2.69	2.69
12-14	B12-4-MM-SPME-SR	6.76E-08	0.24	1.72	1.74	1.74	1.74	1.74	1.74	1.74	1.77	1.77	1.77
12-15	B12-5-MM-SPME-SR	2.64E-07	0.08	1.2	1.24	1.26	1.26	1.26	1.26	1.26	1.33	1.33	1.33
12-16	B12-6-MM-SPME-SR	2.57E-07	-0.07	1	1	1	1	1	1	1	1	1	1
12-17	B12-7-MM-SPME-SR	1.28E-07	0.09	1.25	1.27	1.28	1.28	1.28	1.28	1.28	1.31	1.31	1.31
12-18	B12-8-MM-SPME-SR	1.76E-07	0.09	1.23	1.26	1.27	1.27	1.27	1.27	1.27	1.32	1.32	1.32
12-19	B12-9-MM-SPME-SR	1.39E-07	-0.03	1	1	1	1	1	1	1	1	1	1
12-20	B12-10-MM-SPME-SR	1.49E-07	0.17	1.48	1.51	1.52	1.52	1.52	1.52	1.52	1.57	1.57	1.57

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.

SPAWAR Systems Center Pacific

San Diego, California

Lab ID	Model-predicted Correction Factors [3]												
Congener	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**31**
Homolog	**Di**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**
K_{fs} (L/L_{PDMS}) [1]	**183,877**	**179,691**	**179,691**	**179,691**	**108,275**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**
12-1	1.3	1.3	1.3	1.3	1.28	1.34	1.34	1.3	1.34	1.34	1.3	1.34	1.34
12-2	1.11	1.11	1.11	1.11	1.09	1.14	1.14	1.11	1.14	1.14	1.11	1.14	1.14
12-3	2.01	2.01	2.01	2.01	1.99	2.04	2.04	2.01	2.04	2.04	2.01	2.04	2.04
12-4	1.11	1.11	1.11	1.11	1.09	1.14	1.14	1.11	1.14	1.14	1.11	1.14	1.14
12-5	1.39	1.39	1.39	1.39	1.3	1.53	1.53	1.39	1.53	1.53	1.39	1.53	1.53
12-6	2.02	2.02	2.02	2.02	1.99	2.05	2.05	2.02	2.05	2.05	2.02	2.05	2.05
12-7	1.17	1.17	1.17	1.17	1.14	1.22	1.22	1.17	1.22	1.22	1.17	1.22	1.22
12-8	1.06	1.05	1.05	1.05	1.04	1.08	1.08	1.05	1.08	1.08	1.05	1.08	1.08
12-9	1.2	1.2	1.2	1.2	1.18	1.24	1.24	1.2	1.24	1.24	1.2	1.24	1.24
12-10	1.66	1.66	1.66	1.66	1.62	1.72	1.72	1.66	1.72	1.72	1.66	1.72	1.72
12-11	3.86	3.86	3.86	3.86	3.81	3.94	3.94	3.86	3.94	3.94	3.86	3.94	3.94
12-12	2.43	2.43	2.43	2.43	2.39	2.48	2.48	2.43	2.48	2.48	2.43	2.48	2.48
12-13	2.69	2.69	2.69	2.69	2.67	2.72	2.72	2.69	2.72	2.72	2.69	2.72	2.72
12-14	1.77	1.77	1.77	1.77	1.75	1.8	1.8	1.77	1.8	1.8	1.77	1.8	1.8
12-15	1.33	1.33	1.33	1.33	1.27	1.42	1.42	1.33	1.42	1.42	1.33	1.42	1.42
12-16	1	1	1	1	1	1.01	1.01	1	1.01	1.01	1	1.01	1.01
12-17	1.31	1.31	1.31	1.31	1.28	1.35	1.35	1.31	1.35	1.35	1.31	1.35	1.35
12-18	1.32	1.32	1.32	1.32	1.28	1.38	1.38	1.32	1.38	1.38	1.32	1.38	1.38
12-19	1	1	1	1	1	1.02	1.02	1	1.02	1.02	1	1.02	1.02
12-20	1.57	1.56	1.56	1.56	1.53	1.63	1.63	1.56	1.63	1.63	1.56	1.63	1.63

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.

SPAWAR Systems Center Pacific

San Diego, California

Lab ID	Model-predicted Correction Factors [3]											
Congener	32	33	34	35	37	40	41	42	44	45	46	47
Homolog	Tri	Tri	Tri	Tri	Tri	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra
K_{fs} (L/L_{PDMS}) [1]	179,691	291,425	291,425	472,637	472,637	581,470	581,470	581,470	581,470	402,279	402,279	581,470
12-1	1.3	1.34	1.34	1.41	1.41	1.45	1.45	1.45	1.45	1.39	1.39	1.45
12-2	1.11	1.14	1.14	1.18	1.18	1.21	1.21	1.21	1.21	1.16	1.16	1.21
12-3	2.01	2.04	2.04	2.1	2.1	2.13	2.13	2.13	2.13	2.08	2.08	2.13
12-4	1.11	1.14	1.14	1.19	1.19	1.22	1.22	1.22	1.22	1.17	1.17	1.22
12-5	1.39	1.53	1.53	1.8	1.8	1.99	1.99	1.99	1.99	1.69	1.69	1.99
12-6	2.02	2.05	2.05	2.11	2.11	2.15	2.15	2.15	2.15	2.09	2.09	2.15
12-7	1.17	1.22	1.22	1.3	1.3	1.35	1.35	1.35	1.35	1.27	1.27	1.35
12-8	1.05	1.08	1.08	1.13	1.13	1.16	1.16	1.16	1.16	1.11	1.11	1.16
12-9	1.2	1.24	1.24	1.31	1.31	1.35	1.35	1.35	1.35	1.28	1.28	1.35
12-10	1.66	1.72	1.72	1.81	1.81	1.88	1.88	1.88	1.88	1.78	1.78	1.88
12-11	3.86	3.94	3.94	4.08	4.08	4.17	4.17	4.17	4.17	4.03	4.03	4.17
12-12	2.43	2.48	2.48	2.57	2.57	2.62	2.62	2.62	2.62	2.53	2.53	2.62
12-13	2.69	2.72	2.72	2.77	2.77	2.8	2.8	2.8	2.8	2.75	2.75	2.8
12-14	1.77	1.8	1.8	1.85	1.85	1.88	1.88	1.88	1.88	1.83	1.83	1.88
12-15	1.33	1.42	1.42	1.59	1.59	1.7	1.7	1.7	1.7	1.52	1.52	1.7
12-16	1	1.01	1.01	1.13	1.13	1.2	1.2	1.2	1.2	1.08	1.08	1.2
12-17	1.31	1.35	1.35	1.43	1.43	1.48	1.48	1.48	1.48	1.4	1.4	1.48
12-18	1.32	1.38	1.38	1.49	1.49	1.55	1.55	1.55	1.55	1.44	1.44	1.55
12-19	1	1.02	1.02	1.08	1.08	1.12	1.12	1.12	1.12	1.05	1.05	1.12
12-20	1.56	1.63	1.63	1.73	1.73	1.8	1.8	1.8	1.8	1.69	1.69	1.8

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.

SPAWAR Systems Center Pacific

San Diego, California

Lab ID	Model-predicted Correction Factors [3]											
Congener	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**581,470**	**581,470**	**402,279**	**581,470**	**402,279**	**441,090**	**840,480**	**581,470**	**840,480**	**840,480**	**581,470**	**840,480**
12-1	1.45	1.45	1.39	1.45	1.39	1.4	1.56	1.45	1.56	1.56	1.45	1.56
12-2	1.21	1.21	1.16	1.21	1.16	1.17	1.28	1.21	1.28	1.28	1.21	1.28
12-3	2.13	2.13	2.08	2.13	2.08	2.09	2.21	2.13	2.21	2.21	2.13	2.21
12-4	1.22	1.22	1.17	1.22	1.17	1.18	1.29	1.22	1.29	1.29	1.22	1.29
12-5	1.99	1.99	1.69	1.99	1.69	1.75	2.5	1.99	2.5	2.5	1.99	2.5
12-6	2.15	2.15	2.09	2.15	2.09	2.1	2.24	2.15	2.24	2.24	2.15	2.24
12-7	1.35	1.35	1.27	1.35	1.27	1.28	1.47	1.35	1.47	1.47	1.35	1.47
12-8	1.16	1.16	1.11	1.16	1.11	1.12	1.24	1.16	1.24	1.24	1.16	1.24
12-9	1.35	1.35	1.28	1.35	1.28	1.3	1.46	1.35	1.46	1.46	1.35	1.46
12-10	1.88	1.88	1.78	1.88	1.78	1.8	2.03	1.88	2.03	2.03	1.88	2.03
12-11	4.17	4.17	4.03	4.17	4.03	4.06	4.38	4.17	4.38	4.38	4.17	4.38
12-12	2.62	2.62	2.53	2.62	2.53	2.55	2.76	2.62	2.76	2.76	2.62	2.76
12-13	2.8	2.8	2.75	2.8	2.75	2.76	2.87	2.8	2.87	2.87	2.8	2.87
12-14	1.88	1.88	1.83	1.88	1.83	1.84	1.96	1.88	1.96	1.96	1.88	1.96
12-15	1.7	1.7	1.52	1.7	1.52	1.56	1.99	1.7	1.99	1.99	1.7	1.99
12-16	1.2	1.2	1.08	1.2	1.08	1.11	1.4	1.2	1.4	1.4	1.2	1.4
12-17	1.48	1.48	1.4	1.48	1.4	1.42	1.59	1.48	1.59	1.59	1.48	1.59
12-18	1.55	1.55	1.44	1.55	1.44	1.47	1.72	1.55	1.72	1.72	1.55	1.72
12-19	1.12	1.12	1.05	1.12	1.05	1.07	1.21	1.12	1.21	1.21	1.12	1.21
12-20	1.8	1.8	1.69	1.8	1.69	1.71	1.96	1.8	1.96	1.96	1.8	1.96

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Model-predicted Correction Factors [3]												
Congener	**67**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**	**87**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**840,480**	**840,480**	**581,470**	**581,470**	**840,480**	**581,470**	**1,214,863**	**1,214,863**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,756,011**
12-1	1.56	1.56	1.45	1.45	1.56	1.45	1.73	1.73	2.01	2.01	1.77	2.01	2.01
12-2	1.28	1.28	1.21	1.21	1.28	1.21	1.39	1.39	1.56	1.56	1.41	1.56	1.56
12-3	2.21	2.21	2.13	2.13	2.21	2.13	2.34	2.34	2.53	2.53	2.37	2.53	2.53
12-4	1.29	1.29	1.22	1.22	1.29	1.22	1.41	1.41	1.6	1.6	1.44	1.6	1.6
12-5	2.5	2.5	1.99	1.99	2.5	1.99	3.5	3.5	5.68	5.68	3.78	5.68	5.68
12-6	2.24	2.24	2.15	2.15	2.24	2.15	2.37	2.37	2.58	2.58	2.4	2.58	2.58
12-7	1.47	1.47	1.35	1.35	1.47	1.35	1.67	1.67	2.01	2.01	1.72	2.01	2.01
12-8	1.24	1.24	1.16	1.16	1.24	1.16	1.36	1.36	1.55	1.55	1.39	1.55	1.55
12-9	1.46	1.46	1.35	1.35	1.46	1.35	1.64	1.64	1.92	1.92	1.68	1.92	1.92
12-10	2.03	2.03	1.88	1.88	2.03	1.88	2.28	2.28	2.69	2.69	2.34	2.69	2.69
12-11	4.38	4.38	4.17	4.17	4.38	4.17	4.7	4.7	5.2	5.2	4.77	5.2	5.2
12-12	2.76	2.76	2.62	2.62	2.76	2.62	2.96	2.96	3.29	3.29	3.01	3.29	3.29
12-13	2.87	2.87	2.8	2.8	2.87	2.8	2.98	2.98	3.14	3.14	3	3.14	3.14
12-14	1.96	1.96	1.88	1.88	1.96	1.88	2.08	2.08	2.26	2.26	2.11	2.26	2.26
12-15	1.99	1.99	1.7	1.7	1.99	1.7	2.49	2.49	3.46	3.46	2.63	3.46	3.46
12-16	1.4	1.4	1.2	1.2	1.4	1.2	1.75	1.75	2.41	2.41	1.84	2.41	2.41
12-17	1.59	1.59	1.48	1.48	1.59	1.48	1.78	1.78	2.09	2.09	1.83	2.09	2.09
12-18	1.72	1.72	1.55	1.55	1.72	1.55	2.01	2.01	2.5	2.5	2.08	2.5	2.5
12-19	1.21	1.21	1.12	1.12	1.21	1.12	1.37	1.37	1.62	1.62	1.4	1.62	1.62
12-20	1.96	1.96	1.8	1.8	1.96	1.8	2.23	2.23	2.68	2.68	2.3	2.68	2.68

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Model-predicted Correction Factors [3]												
Congener	**90/101**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**101**	**103**	**105**	**107**	**110**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**1,301,749**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**2,368,794**	**2,368,794**	**1,756,011**
12-1	2.01	1.77	2.01	1.77	1.77	2.01	2.01	1.77	2.01	1.77	2.37	2.37	2.01
12-2	1.56	1.41	1.56	1.41	1.41	1.56	1.56	1.41	1.56	1.41	1.78	1.78	1.56
12-3	2.53	2.37	2.53	2.37	2.37	2.53	2.53	2.37	2.53	2.37	2.76	2.76	2.53
12-4	1.6	1.44	1.6	1.44	1.44	1.6	1.6	1.44	1.6	1.44	1.85	1.85	1.6
12-5	5.68	3.78	5.68	3.78	3.78	5.68	5.68	3.78	5.68	3.78	9.84	9.84	5.68
12-6	2.58	2.4	2.58	2.4	2.4	2.58	2.58	2.4	2.58	2.4	2.84	2.84	2.58
12-7	2.01	1.72	2.01	1.72	1.72	2.01	2.01	1.72	2.01	1.72	2.48	2.48	2.01
12-8	1.55	1.39	1.55	1.39	1.39	1.55	1.55	1.39	1.55	1.39	1.8	1.8	1.55
12-9	1.92	1.68	1.92	1.68	1.68	1.92	1.92	1.68	1.92	1.68	2.31	2.31	1.92
12-10	2.69	2.34	2.69	2.34	2.34	2.69	2.69	2.34	2.69	2.34	3.25	3.25	2.69
12-11	5.2	4.77	5.2	4.77	4.77	5.2	5.2	4.77	5.2	4.77	5.84	5.84	5.2
12-12	3.29	3.01	3.29	3.01	3.01	3.29	3.29	3.01	3.29	3.01	3.7	3.7	3.29
12-13	3.14	3	3.14	3	3	3.14	3.14	3	3.14	3	3.34	3.34	3.14
12-14	2.26	2.11	2.26	2.11	2.11	2.26	2.26	2.11	2.26	2.11	2.49	2.49	2.26
12-15	3.46	2.63	3.46	2.63	2.63	3.46	3.46	2.63	3.46	2.63	5.03	5.03	3.46
12-16	2.41	1.84	2.41	1.84	1.84	2.41	2.41	1.84	2.41	1.84	3.47	3.47	2.41
12-17	2.09	1.83	2.09	1.83	1.83	2.09	2.09	1.83	2.09	1.83	2.5	2.5	2.09
12-18	2.5	2.08	2.5	2.08	2.08	2.5	2.5	2.08	2.5	2.08	3.21	3.21	2.5
12-19	1.62	1.4	1.62	1.4	1.4	1.62	1.62	1.4	1.62	1.4	1.97	1.97	1.62
12-20	2.68	2.3	2.68	2.3	2.3	2.68	2.68	2.3	2.68	2.3	3.31	3.31	2.68

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.

SPAWAR Systems Center Pacific

San Diego, California

Lab ID	Model-predicted Correction Factors [3]												
Congener	**114**	**115**	**117**	**118**	**119**	**122**	**123**	**124**	**126**	**128**	**129**	**130**	**131**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**2,368,794**	**1,756,011**	**1,756,011**	**2,368,794**	**1,756,011**	**2,368,794**	**2,368,794**	**2,368,794**	**3,195,415**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**
12-1	2.37	2.01	2.01	2.37	2.01	2.37	2.37	2.37	2.97	4.8	4.8	4.8	3.63
12-2	1.78	1.56	1.56	1.78	1.56	1.78	1.78	1.78	2.13	3.11	3.11	3.11	2.5
12-3	2.76	2.53	2.53	2.76	2.53	2.76	2.76	2.76	3.11	4.02	4.02	4.02	3.46
12-4	1.85	1.6	1.6	1.85	1.6	1.85	1.85	1.85	2.24	3.37	3.37	3.37	2.66
12-5	9.84	5.68	5.68	9.84	5.68	9.84	9.84	9.84	20.6	99.1	99.1	99.1	39.8
12-6	2.84	2.58	2.58	2.84	2.58	2.84	2.84	2.84	3.23	4.24	4.24	4.24	3.62
12-7	2.48	2.01	2.01	2.48	2.01	2.48	2.48	2.48	3.3	6.02	6.02	6.02	4.25
12-8	1.8	1.55	1.55	1.8	1.55	1.8	1.8	1.8	2.2	3.36	3.36	3.36	2.63
12-9	2.31	1.92	1.92	2.31	1.92	2.31	2.31	2.31	2.95	4.99	4.99	4.99	3.68
12-10	3.25	2.69	2.69	3.25	2.69	3.25	3.25	3.25	4.19	7.17	7.17	7.17	5.25
12-11	5.84	5.2	5.2	5.84	5.2	5.84	5.84	5.84	6.83	9.52	9.52	9.52	7.85
12-12	3.7	3.29	3.29	3.7	3.29	3.7	3.7	3.7	4.34	6.09	6.09	6.09	5
12-13	3.34	3.14	3.14	3.34	3.14	3.34	3.34	3.34	3.62	4.3	4.3	4.3	3.89
12-14	2.49	2.26	2.26	2.49	2.26	2.49	2.49	2.49	2.83	3.71	3.71	3.71	3.17
12-15	5.03	3.46	3.46	5.03	3.46	5.03	5.03	5.03	8.32	24.2	24.2	24.2	13
12-16	3.47	2.41	2.41	3.47	2.41	3.47	3.47	3.47	5.66	16	16	16	8.75
12-17	2.5	2.09	2.09	2.5	2.09	2.5	2.5	2.5	3.19	5.35	5.35	5.35	3.96
12-18	3.21	2.5	2.5	3.21	2.5	3.21	3.21	3.21	4.49	9.16	9.16	9.16	6.06
12-19	1.97	1.62	1.62	1.97	1.62	1.97	1.97	1.97	2.57	4.5	4.5	4.5	3.25
12-20	3.31	2.68	2.68	3.31	2.68	3.31	3.31	3.31	4.4	8.01	8.01	8.01	5.65

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Model-predicted Correction Factors [3]											
Congener	**132**	**134**	**135**	**136**	**137**	**138**	**141**	**144**	**146**	**147**	**149**	**151**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**3,931,220**	**3,931,220**	**3,931,220**	**4,836,457**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**
12-1	3.63	3.63	3.63	4.65	4.8	4.8	4.8	3.63	4.8	3.63	3.63	3.63
12-2	2.5	2.5	2.5	3.04	3.11	3.11	3.11	2.5	3.11	2.5	2.5	2.5
12-3	3.46	3.46	3.46	3.95	4.02	4.02	4.02	3.46	4.02	3.46	3.46	3.46
12-4	2.66	2.66	2.66	3.29	3.37	3.37	3.37	2.66	3.37	2.66	2.66	2.66
12-5	39.8	39.8	39.8	89.6	99.1	99.1	99.1	39.8	99.1	39.8	39.8	39.8
12-6	3.62	3.62	3.62	4.17	4.24	4.24	4.24	3.62	4.24	3.62	3.62	3.62
12-7	4.25	4.25	4.25	5.79	6.02	6.02	6.02	4.25	6.02	4.25	4.25	4.25
12-8	2.63	2.63	2.63	3.27	3.36	3.36	3.36	2.63	3.36	2.63	2.63	2.63
12-9	3.68	3.68	3.68	4.82	4.99	4.99	4.99	3.68	4.99	3.68	3.68	3.68
12-10	5.25	5.25	5.25	6.93	7.17	7.17	7.17	5.25	7.17	5.25	5.25	5.25
12-11	7.85	7.85	7.85	9.32	9.52	9.52	9.52	7.85	9.52	7.85	7.85	7.85
12-12	5	5	5	5.96	6.09	6.09	6.09	5	6.09	5	5	5
12-13	3.89	3.89	3.89	4.25	4.3	4.3	4.3	3.89	4.3	3.89	3.89	3.89
12-14	3.17	3.17	3.17	3.65	3.71	3.71	3.71	3.17	3.71	3.17	3.17	3.17
12-15	13	13	13	22.6	24.2	24.2	24.2	13	24.2	13	13	13
12-16	8.75	8.75	8.75	15	16	16	16	8.75	16	8.75	8.75	8.75
12-17	3.96	3.96	3.96	5.18	5.35	5.35	5.35	3.96	5.35	3.96	3.96	3.96
12-18	6.06	6.06	6.06	8.75	9.16	9.16	9.16	6.06	9.16	6.06	6.06	6.06
12-19	3.25	3.25	3.25	4.34	4.5	4.5	4.5	3.25	4.5	3.25	3.25	3.25
12-20	5.65	5.65	5.65	7.71	8.01	8.01	8.01	5.65	8.01	5.65	5.65	5.65

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.

SPAWAR Systems Center Pacific

San Diego, California

Lab ID	Model-predicted Correction Factors [3]											
Congener	**153**	**156**	**157**	**158**	**163**	**164**	**165**	**167**	**169**	**170**	**171**	**172**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**4,949,112**	**6,375,692**	**6,375,692**	**4,949,112**	**4,949,112**	**4,949,112**	**4,949,112**	**6,375,692**	**8,213,482**	**13,630,987**	**11,079,682**	**13,630,987**
12-1	4.8	7.09	7.09	4.8	4.8	4.8	4.8	7.09	11.7	51.5	25.6	51.5
12-2	3.11	4.24	4.24	3.11	3.11	3.11	3.11	4.24	6.32	20.4	11.8	20.4
12-3	4.02	4.94	4.94	4.02	4.02	4.02	4.02	4.94	6.45	14.1	9.77	14.1
12-4	3.37	4.71	4.71	3.37	3.37	3.37	3.37	4.71	7.23	25.6	14.1	25.6
12-5	99.1	> 100	> 100	99.1	99.1	99.1	99.1	> 100	> 100	> 100	> 100	> 100
12-6	4.24	5.3	5.3	4.24	4.24	4.24	4.24	5.3	7.06	16.4	11	16.4
12-7	6.02	9.81	9.81	6.02	6.02	6.02	6.02	9.81	18.4	> 100	49.2	> 100
12-8	3.36	4.76	4.76	3.36	3.36	3.36	3.36	4.76	7.44	27.8	14.9	27.8
12-9	4.99	7.63	7.63	4.99	4.99	4.99	4.99	7.63	13.2	66.4	31	66.4
12-10	7.17	11.1	11.1	7.17	7.17	7.17	7.17	11.1	19.5	> 100	47.1	> 100
12-11	9.52	12.5	12.5	9.52	9.52	9.52	9.52	12.5	17.6	49.2	30.3	49.2
12-12	6.09	8.02	8.02	6.09	6.09	6.09	6.09	8.02	11.4	32.5	19.9	32.5
12-13	4.3	4.94	4.94	4.3	4.3	4.3	4.3	4.94	5.92	10.1	7.83	10.1
12-14	3.71	4.64	4.64	3.71	3.71	3.71	3.71	4.64	6.17	14.4	9.65	14.4
12-15	24.2	57.6	57.6	24.2	24.2	24.2	24.2	57.6	> 100	> 100	> 100	> 100
12-16	16	37.2	37.2	16	16	16	16	37.2	> 100	> 100	> 100	> 100
12-17	5.35	8.15	8.15	5.35	5.35	5.35	5.35	8.15	14	69.2	32.6	69.2
12-18	9.16	16.4	16.4	9.16	9.16	9.16	9.16	16.4	34.5	> 100	> 100	> 100
12-19	4.5	7.1	7.1	4.5	4.5	4.5	4.5	7.1	12.8	72.2	31.9	72.2
12-20	8.01	13.1	13.1	8.01	8.01	8.01	8.01	13.1	24.5	> 100	65.4	> 100

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Model-predicted Correction Factors [3]											
Congener	173	174	175	176	177	178	179	180	183	184	185	187 [4]
Homolog	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta
K_{fs} (L/L_{PDMS}) [1]	11,079,682	11,079,682	11,079,682	14,273,396	11,079,682	11,079,682	14,273,396	13,630,987	11,079,682	14,273,396	11,079,682	11,079,682
12-1	25.6	25.6	25.6	61.4	25.6	25.6	61.4	51.5	25.6	61.4	25.6	25.6
12-2	11.8	11.8	11.8	23.5	11.8	11.8	23.5	20.4	11.8	23.5	11.8	11.8
12-3	9.77	9.77	9.77	15.5	9.77	9.77	15.5	14.1	9.77	15.5	9.77	9.77
12-4	14.1	14.1	14.1	29.8	14.1	14.1	29.8	25.6	14.1	29.8	14.1	14.1
12-5	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-6	11	11	11	18.2	11	11	18.2	16.4	11	18.2	11	11
12-7	49.2	49.2	49.2	> 100	49.2	49.2	> 100	> 100	49.2	> 100	49.2	49.2
12-8	14.9	14.9	14.9	32.4	14.9	14.9	32.4	27.8	14.9	32.4	14.9	14.9
12-9	31	31	31	80.5	31	31	80.5	66.4	31	80.5	31	31
12-10	47.1	47.1	47.1	> 100	47.1	47.1	> 100	> 100	47.1	> 100	47.1	47.1
12-11	30.3	30.3	30.3	55.5	30.3	30.3	55.5	49.2	30.3	55.5	30.3	30.3
12-12	19.9	19.9	19.9	36.8	19.9	19.9	36.8	32.5	19.9	36.8	19.9	19.9
12-13	7.83	7.83	7.83	10.7	7.83	7.83	10.7	10.1	7.83	10.7	7.83	7.83
12-14	9.65	9.65	9.65	15.9	9.65	9.65	15.9	14.4	9.65	15.9	9.65	9.65
12-15	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-16	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-17	32.6	32.6	32.6	83.7	32.6	32.6	83.7	69.2	32.6	83.7	32.6	32.6
12-18	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-19	31.9	31.9	31.9	88.7	31.9	31.9	88.7	72.2	31.9	88.7	31.9	31.9
12-20	65.4	65.4	65.4	> 100	65.4	65.4	> 100	> 100	65.4	> 100	65.4	65.4

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.

SPAWAR Systems Center Pacific

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Lab ID	Model-predicted Correction Factors [3]										
Congener	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**
K_{fs} (L/L_{PDMS}) [1]	**17,160,396**	**13,630,987**	**13,630,987**	**13,630,987**	**37,542,856**	**31,226,788**	**31,226,788**	**41,164,924**	**41,164,924**	**41,164,924**	**31,226,788**
12-1	> 100	51.5	51.5	51.5	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-2	43.9	20.4	20.4	20.4	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-3	23.6	14.1	14.1	14.1	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-4	58.5	25.6	25.6	25.6	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-5	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-6	28.5	16.4	16.4	16.4	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-7	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-8	65.5	27.8	27.8	27.8	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-9	> 100	66.4	66.4	66.4	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-10	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-11	95.8	49.2	49.2	49.2	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-12	64.2	32.5	32.5	32.5	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-13	14.2	10.1	10.1	10.1	> 100	56.4	56.4	> 100	> 100	> 100	56.4
12-14	24.9	14.4	14.4	14.4	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-15	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-16	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-17	> 100	69.2	69.2	69.2	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-18	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-19	> 100	72.2	72.2	72.2	> 100	> 100	> 100	> 100	> 100	> 100	> 100
12-20	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.

SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Model-predicted Correction Factors [3]					
Congener	202	203	205	206	207	208
Homolog	Octa	Octa	Octa	Nona	Nona	Nona
K_{fs} (L/L_{PDMS}) [1]	41,164,924	31,226,788	37,542,856	84,047,986	113,377,614	113,377,614
12-1	> 100	> 100	> 100	> 100	> 100	> 100
12-2	> 100	> 100	> 100	> 100	> 100	> 100
12-3	> 100	> 100	> 100	> 100	> 100	> 100
12-4	> 100	> 100	> 100	> 100	> 100	> 100
12-5	> 100	> 100	> 100	> 100	> 100	> 100
12-6	> 100	> 100	> 100	> 100	> 100	> 100
12-7	> 100	> 100	> 100	> 100	> 100	> 100
12-8	> 100	> 100	> 100	> 100	> 100	> 100
12-9	> 100	> 100	> 100	> 100	> 100	> 100
12-10	> 100	> 100	> 100	> 100	> 100	> 100
12-11	> 100	> 100	> 100	> 100	> 100	> 100
12-12	> 100	> 100	> 100	> 100	> 100	> 100
12-13	> 100	56.4	> 100	> 100	> 100	> 100
12-14	> 100	> 100	> 100	> 100	> 100	> 100
12-15	> 100	> 100	> 100	> 100	> 100	> 100
12-16	> 100	> 100	> 100	> 100	> 100	> 100
12-17	> 100	> 100	> 100	> 100	> 100	> 100
12-18	> 100	> 100	> 100	> 100	> 100	> 100
12-19	> 100	> 100	> 100	> 100	> 100	> 100
12-20	> 100	> 100	> 100	> 100	> 100	> 100

Notes:

1 K_{fs} (L/L_{PDMS}) is the Fiber PDMS-Solution Water Partition Coefficient (**Table 4**)

2 Regression Model for Log_{10} CF on K_{fs} (**Table 7**)

3 Correction factors (CFs) for each PCB congener were calculated using regression models developed for each sample and the K_{fs} value. If the model-predicted CF was greater than 100 (indicating the sampling period was such that less than 1% of steady state concentrations were reached), conditions were considered insufficient to quantify an accurate and precise value.

4 Concentration of PCB-187 was not calculated (**Table 5**)

5 If CF was estimated to be less than 1, the CF was assumed to be one.

6 L = liter

7 PCB = polychlorobiphenyl

8 NC = not calculated

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID		Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)													
		1	3	5	6	7	8	9	12	13	14	15	16	17	18
Homolog		Mono	Mono	Di	Di	Di	Di	Di	Di	Di	Di	Di	Tri	Tri	Tri
K_{fs} (L/L_{PDMS}) [1]		16,388	71,536	88,009	88,009	88,009	88,009	88,009	183,877	183,877	183,877	183,877	179,691	179,691	179,691
S (ng/L) [2]	Sample ID	2,480,000	2,480,000	596,190	596,190	596,190	596,190	596,190	596,190	596,190	596,190	596,190	139,910	139,910	139,910
12-1	B12-1-MM-SPME-Core	< 0.76	< 0.18	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.071	< 0.071	< 0.071	< 0.071	< 0.072	< 0.072	< 0.072
12-2	B12-2-MM-SPME-Core	< 0.65	< 0.15	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.06	< 0.06	< 0.06	< 0.06	< 0.062	< 0.062	< 0.062
12-3	B12-3-MM-SPME-Core	< 1.2	< 0.28	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
12-4	B12-4-MM-SPME-Core	< 0.65	< 0.15	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.06	< 0.06	< 0.06	< 0.06	< 0.062	< 0.062	< 0.062
12-5	B12-5-MM-SPME-Core	< 2.2	< 0.53	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23
12-6	B12-6-MM-SPME-Core	< 1.2	< 0.28	< 0.23	< 0.23	< 0.23	< 0.23	< 0.23	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
12-7	B12-7-MM-SPME-Core	< 0.68	< 0.16	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.064	< 0.064	< 0.064	< 0.064	< 0.065	< 0.065	< 0.065
12-8	B12-8-MM-SPME-Core	< 0.62	< 0.14	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.058	< 0.058	< 0.058	< 0.058	< 0.058	< 0.058	< 0.058
12-9	B12-9-MM-SPME-Core	< 0.7	< 0.16	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.065	< 0.065	< 0.065	< 0.065	< 0.067	< 0.067	< 0.067
12-10	B12-10-MM-SPME-Core	< 0.96	< 0.22	< 0.18	< 0.18	< 0.18	< 0.18	< 0.18	< 0.09	< 0.09	< 0.09	< 0.09	< 0.092	< 0.092	< 0.092
12-11	B12-1-MM-SPME-SR	< 2.3	< 0.53	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21
12-12	B12-2-MM-SPME-SR	< 1.4	< 0.33	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.13	< 0.13	< 0.13	< 0.13	< 0.14	< 0.14	< 0.14
12-13	B12-3-MM-SPME-SR	< 1.6	< 0.37	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
12-14	B12-4-MM-SPME-SR	< 1	< 0.24	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.096	< 0.096	< 0.096	< 0.096	< 0.099	< 0.099	< 0.099
12-15	B12-5-MM-SPME-SR	< 0.73	< 0.17	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.072	< 0.072	< 0.072	< 0.072	< 0.074	< 0.074	< 0.074
12-16	B12-6-MM-SPME-SR	< 0.61	< 0.14	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.054	< 0.054	< 0.054	< 0.054	< 0.056	< 0.056	< 0.056
12-17	B12-7-MM-SPME-SR	< 0.76	< 0.18	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.071	< 0.071	< 0.071	< 0.071	< 0.073	< 0.073	< 0.073
12-18	B12-8-MM-SPME-SR	< 0.75	< 0.18	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.072	< 0.072	< 0.072	< 0.072	< 0.073	< 0.073	< 0.073
12-19	B12-9-MM-SPME-SR	< 0.61	< 0.14	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.054	< 0.054	< 0.054	< 0.054	< 0.056	< 0.056	< 0.056
12-20	B12-10-MM-SPME-SR	< 0.9	< 0.21	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.085	< 0.085	< 0.085	< 0.085	< 0.087	< 0.087	< 0.087

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)															
Lab ID	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**31**	**32**	**33**	**34**	**35**	**37**	**40**	**41**
Homolog	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**108,275**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**472,637**	**472,637**	**581,470**	**581,470**
S (ng/L) [2]	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**32,245**	**32,245**
12-1	*< 0.12*	*< 0.046*	*< 0.046*	*< 0.072*	*< 0.046*	*< 0.046*	*< 0.072*	*< 0.046*	*< 0.046*	*< 0.072*	*< 0.046*	*< 0.046*	*< 0.03*	*< 0.03*	*< 0.025*	*< 0.025*
12-2	*< 0.1*	*< 0.039*	*< 0.039*	*< 0.062*	*< 0.039*	*< 0.039*	*< 0.062*	*< 0.039*	*< 0.039*	*< 0.062*	*< 0.039*	*< 0.039*	*< 0.025*	*< 0.025*	*< 0.021*	*< 0.021*
12-3	*< 0.18*	*< 0.07*	*< 0.07*	*< 0.11*	*< 0.07*	*< 0.07*	*< 0.11*	*< 0.07*	*< 0.07*	*< 0.11*	*< 0.07*	*< 0.07*	*< 0.044*	*< 0.044*	*< 0.037*	*< 0.037*
12-4	*< 0.1*	*< 0.039*	*< 0.039*	*< 0.062*	*< 0.039*	*< 0.039*	*< 0.062*	*< 0.039*	*< 0.039*	*< 0.062*	*< 0.039*	*< 0.039*	*< 0.025*	*< 0.025*	*< 0.021*	*< 0.021*
12-5	*< 0.36*	*< 0.16*	*< 0.16*	*< 0.23*	*< 0.16*	*< 0.16*	*< 0.23*	*< 0.16*	*< 0.16*	*< 0.23*	*< 0.16*	*< 0.16*	*< 0.11*	*< 0.11*	*< 0.1*	*< 0.1*
12-6	*< 0.18*	*< 0.07*	*< 0.07*	*< 0.11*	*< 0.07*	*< 0.07*	*< 0.11*	*< 0.07*	*< 0.07*	*< 0.11*	*< 0.07*	*< 0.07*	*< 0.045*	*< 0.045*	*< 0.037*	*< 0.037*
12-7	*< 0.11*	*< 0.042*	*< 0.042*	*< 0.065*	*< 0.042*	*< 0.042*	*< 0.065*	*< 0.042*	*< 0.042*	*< 0.065*	*< 0.042*	*< 0.042*	*< 0.028*	*< 0.028*	*< 0.023*	*< 0.023*
12-8	*< 0.096*	*< 0.037*	*< 0.037*	*< 0.058*	*< 0.037*	*< 0.037*	*< 0.058*	*< 0.037*	*< 0.037*	*< 0.058*	*< 0.037*	*< 0.037*	*< 0.024*	*< 0.024*	*< 0.02*	*< 0.02*
12-9	*< 0.11*	*< 0.043*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.043*	*< 0.028*	*< 0.028*	*< 0.023*	*< 0.023*
12-10	*< 0.15*	*< 0.059*	*< 0.059*	*< 0.092*	*< 0.059*	*< 0.059*	*< 0.092*	*< 0.059*	*< 0.059*	*< 0.092*	*< 0.059*	*< 0.059*	*< 0.038*	*< 0.038*	*< 0.032*	*< 0.032*
12-11	*< 0.35*	*< 0.14*	*< 0.14*	*< 0.21*	*< 0.14*	*< 0.14*	*< 0.21*	*< 0.14*	*< 0.14*	*< 0.21*	*< 0.14*	*< 0.14*	*< 0.086*	*< 0.086*	*< 0.072*	*< 0.072*
12-12	*< 0.22*	*< 0.085*	*< 0.085*	*< 0.14*	*< 0.085*	*< 0.085*	*< 0.14*	*< 0.085*	*< 0.085*	*< 0.14*	*< 0.085*	*< 0.085*	*< 0.054*	*< 0.054*	*< 0.045*	*< 0.045*
12-13	*< 0.25*	*< 0.093*	*< 0.093*	*< 0.15*	*< 0.093*	*< 0.093*	*< 0.15*	*< 0.093*	*< 0.093*	*< 0.15*	*< 0.093*	*< 0.093*	*< 0.059*	*< 0.059*	*< 0.048*	*< 0.048*
12-14	*< 0.16*	*< 0.062*	*< 0.062*	*< 0.099*	*< 0.062*	*< 0.062*	*< 0.099*	*< 0.062*	*< 0.062*	*< 0.099*	*< 0.062*	*< 0.062*	*< 0.039*	*< 0.039*	*< 0.032*	*< 0.032*
12-15	*< 0.12*	*< 0.049*	*< 0.049*	*< 0.074*	*< 0.049*	*< 0.049*	*< 0.074*	*< 0.049*	*< 0.049*	*< 0.074*	*< 0.049*	*< 0.049*	*< 0.034*	*< 0.034*	*< 0.029*	*< 0.029*
12-16	*< 0.092*	*< 0.035*	*< 0.035*	*< 0.056*	*< 0.035*	*< 0.035*	*< 0.056*	*< 0.035*	*< 0.035*	*< 0.056*	*< 0.035*	*< 0.035*	*< 0.024*	*< 0.024*	*< 0.021*	*< 0.021*
12-17	*< 0.12*	*< 0.046*	*< 0.046*	*< 0.073*	*< 0.046*	*< 0.046*	*< 0.073*	*< 0.046*	*< 0.046*	*< 0.073*	*< 0.046*	*< 0.046*	*< 0.03*	*< 0.03*	*< 0.025*	*< 0.025*
12-18	*< 0.12*	*< 0.047*	*< 0.047*	*< 0.073*	*< 0.047*	*< 0.047*	*< 0.073*	*< 0.047*	*< 0.047*	*< 0.073*	*< 0.047*	*< 0.047*	*< 0.032*	*< 0.032*	*< 0.027*	*< 0.027*
12-19	*< 0.092*	*< 0.035*	*< 0.035*	*< 0.056*	*< 0.035*	*< 0.035*	*< 0.056*	*< 0.035*	*< 0.035*	*< 0.056*	*< 0.035*	*< 0.035*	*< 0.023*	*< 0.023*	*< 0.019*	*< 0.019*
12-20	*< 0.14*	*< 0.056*	*< 0.056*	*< 0.087*	*< 0.056*	*< 0.056*	*< 0.087*	*< 0.056*	*< 0.056*	*< 0.087*	*< 0.056*	*< 0.056*	*< 0.037*	*< 0.037*	*< 0.031*	*< 0.031*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)														
Lab ID	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**581,470**	**581,470**	**402,279**	**402,279**	**581,470**	**581,470**	**581,470**	**402,279**	**581,470**	**402,279**	**441,090**	**840,480**	**581,470**	**840,480**	**840,480**
S (ng/L) [2]	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**
12-1	*< 0.025*	*< 0.025*	*< 0.035*	*< 0.035*	*< 0.025*	*< 0.025*	*< 0.025*	*< 0.035*	*< 0.025*	*< 0.035*	*< 0.032*	*< 0.019*	*< 0.025*	*< 0.019*	*< 0.019*
12-2	*< 0.021*	*< 0.021*	*< 0.029*	*< 0.029*	*< 0.021*	*< 0.021*	*< 0.021*	*< 0.029*	*< 0.021*	*< 0.029*	*< 0.027*	*< 0.015*	*< 0.021*	*< 0.015*	*< 0.015*
12-3	*< 0.037*	*< 0.037*	*< 0.052*	*< 0.052*	*< 0.037*	*< 0.037*	*< 0.037*	*< 0.052*	*< 0.037*	*< 0.052*	*< 0.047*	*< 0.026*	*< 0.037*	*< 0.026*	*< 0.026*
12-4	*< 0.021*	*< 0.021*	*< 0.029*	*< 0.029*	*< 0.021*	*< 0.021*	*< 0.021*	*< 0.029*	*< 0.021*	*< 0.029*	*< 0.027*	*< 0.015*	*< 0.021*	*< 0.015*	*< 0.015*
12-5	*< 0.1*	*< 0.1*	*< 0.13*	*< 0.13*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.13*	*< 0.1*	*< 0.13*	*< 0.12*	*< 0.089*	*< 0.1*	*< 0.089*	*< 0.089*
12-6	*< 0.037*	*< 0.037*	*< 0.052*	*< 0.052*	*< 0.037*	*< 0.037*	*< 0.037*	*< 0.052*	*< 0.037*	*< 0.052*	*< 0.048*	*< 0.027*	*< 0.037*	*< 0.027*	*< 0.027*
12-7	*< 0.023*	*< 0.023*	*< 0.032*	*< 0.032*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.032*	*< 0.023*	*< 0.032*	*< 0.029*	*< 0.017*	*< 0.023*	*< 0.017*	*< 0.017*
12-8	*< 0.02*	*< 0.02*	*< 0.028*	*< 0.028*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.028*	*< 0.02*	*< 0.028*	*< 0.025*	*< 0.015*	*< 0.02*	*< 0.015*	*< 0.015*
12-9	*< 0.023*	*< 0.023*	*< 0.032*	*< 0.032*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.032*	*< 0.023*	*< 0.032*	*< 0.029*	*< 0.017*	*< 0.023*	*< 0.017*	*< 0.017*
12-10	*< 0.032*	*< 0.032*	*< 0.044*	*< 0.044*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.044*	*< 0.032*	*< 0.044*	*< 0.041*	*< 0.024*	*< 0.032*	*< 0.024*	*< 0.024*
12-11	*< 0.072*	*< 0.072*	*< 0.1*	*< 0.1*	*< 0.072*	*< 0.072*	*< 0.072*	*< 0.1*	*< 0.072*	*< 0.1*	*< 0.092*	*< 0.052*	*< 0.072*	*< 0.052*	*< 0.052*
12-12	*< 0.045*	*< 0.045*	*< 0.063*	*< 0.063*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.063*	*< 0.045*	*< 0.063*	*< 0.058*	*< 0.033*	*< 0.045*	*< 0.033*	*< 0.033*
12-13	*< 0.048*	*< 0.048*	*< 0.068*	*< 0.068*	*< 0.048*	*< 0.048*	*< 0.048*	*< 0.068*	*< 0.048*	*< 0.068*	*< 0.063*	*< 0.034*	*< 0.048*	*< 0.034*	*< 0.034*
12-14	*< 0.032*	*< 0.032*	*< 0.045*	*< 0.045*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.045*	*< 0.032*	*< 0.045*	*< 0.042*	*< 0.023*	*< 0.032*	*< 0.023*	*< 0.023*
12-15	*< 0.029*	*< 0.029*	*< 0.038*	*< 0.038*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.038*	*< 0.029*	*< 0.038*	*< 0.035*	*< 0.024*	*< 0.029*	*< 0.024*	*< 0.024*
12-16	*< 0.021*	*< 0.021*	*< 0.027*	*< 0.027*	*< 0.021*	*< 0.021*	*< 0.021*	*< 0.027*	*< 0.021*	*< 0.027*	*< 0.025*	*< 0.017*	*< 0.021*	*< 0.017*	*< 0.017*
12-17	*< 0.025*	*< 0.025*	*< 0.035*	*< 0.035*	*< 0.025*	*< 0.025*	*< 0.025*	*< 0.035*	*< 0.025*	*< 0.035*	*< 0.032*	*< 0.019*	*< 0.025*	*< 0.019*	*< 0.019*
12-18	*< 0.027*	*< 0.027*	*< 0.036*	*< 0.036*	*< 0.027*	*< 0.027*	*< 0.027*	*< 0.036*	*< 0.027*	*< 0.036*	*< 0.033*	*< 0.02*	*< 0.027*	*< 0.02*	*< 0.02*
12-19	*< 0.019*	*< 0.019*	*< 0.026*	*< 0.026*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.026*	*< 0.019*	*< 0.026*	*< 0.024*	*< 0.014*	*< 0.019*	*< 0.014*	*< 0.014*
12-20	*< 0.031*	*< 0.031*	*< 0.042*	*< 0.042*	*< 0.031*	*< 0.031*	*< 0.031*	*< 0.042*	*< 0.031*	*< 0.042*	*< 0.039*	*< 0.023*	*< 0.031*	*< 0.023*	*< 0.023*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] (ng $_{PCB}$/L $_{Porewater}$)													
Lab ID	**64**	**66**	**67**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**581,470**	**840,480**	**840,480**	**840,480**	**581,470**	**581,470**	**840,480**	**581,470**	**1,214,863**	**1,214,863**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**
S (ng/L) [2]	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**7,328**	**7,328**	**7,328**	**7,328**
12-1	< 0.025	< 0.019	< 0.019	< 0.019	< 0.025	< 0.025	< 0.019	< 0.025	< 0.014	< 0.014	< 0.011	< 0.011	< 0.014	< 0.011
12-2	< 0.021	< 0.015	< 0.015	< 0.015	< 0.021	< 0.021	< 0.015	< 0.021	< 0.011	< 0.011	< 0.0089	< 0.0089	< 0.011	< 0.0089
12-3	< 0.037	< 0.026	< 0.026	< 0.026	< 0.037	< 0.037	< 0.026	< 0.037	< 0.019	< 0.019	< 0.014	< 0.014	< 0.018	< 0.014
12-4	< 0.021	< 0.015	< 0.015	< 0.015	< 0.021	< 0.021	< 0.015	< 0.021	< 0.012	< 0.012	< 0.0091	< 0.0091	< 0.011	< 0.0091
12-5	< 0.1	< 0.089	< 0.089	< 0.089	< 0.1	< 0.1	< 0.089	< 0.1	< 0.086	< 0.086	< 0.097	< 0.097	< 0.087	< 0.097
12-6	< 0.037	< 0.027	< 0.027	< 0.027	< 0.037	< 0.037	< 0.027	< 0.037	< 0.02	< 0.02	< 0.015	< 0.015	< 0.018	< 0.015
12-7	< 0.023	< 0.017	< 0.017	< 0.017	< 0.023	< 0.023	< 0.017	< 0.023	< 0.014	< 0.014	< 0.011	< 0.011	< 0.013	< 0.011
12-8	< 0.02	< 0.015	< 0.015	< 0.015	< 0.02	< 0.02	< 0.015	< 0.02	< 0.011	< 0.011	< 0.0088	< 0.0088	< 0.011	< 0.0088
12-9	< 0.023	< 0.017	< 0.017	< 0.017	< 0.023	< 0.023	< 0.017	< 0.023	< 0.013	< 0.013	< 0.011	< 0.011	< 0.013	< 0.011
12-10	< 0.032	< 0.024	< 0.024	< 0.024	< 0.032	< 0.032	< 0.024	< 0.032	< 0.019	< 0.019	< 0.015	< 0.015	< 0.018	< 0.015
12-11	< 0.072	< 0.052	< 0.052	< 0.052	< 0.072	< 0.072	< 0.052	< 0.072	< 0.039	< 0.039	< 0.03	< 0.03	< 0.037	< 0.03
12-12	< 0.045	< 0.033	< 0.033	< 0.033	< 0.045	< 0.045	< 0.033	< 0.045	< 0.024	< 0.024	< 0.019	< 0.019	< 0.023	< 0.019
12-13	< 0.048	< 0.034	< 0.034	< 0.034	< 0.048	< 0.048	< 0.034	< 0.048	< 0.025	< 0.025	< 0.018	< 0.018	< 0.023	< 0.018
12-14	< 0.032	< 0.023	< 0.023	< 0.023	< 0.032	< 0.032	< 0.023	< 0.032	< 0.017	< 0.017	< 0.013	< 0.013	< 0.016	< 0.013
12-15	< 0.029	< 0.024	< 0.024	< 0.024	< 0.029	< 0.029	< 0.024	< 0.029	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
12-16	< 0.021	< 0.017	< 0.017	< 0.017	< 0.021	< 0.021	< 0.017	< 0.021	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014
12-17	< 0.025	< 0.019	< 0.019	< 0.019	< 0.025	< 0.025	< 0.019	< 0.025	< 0.015	< 0.015	< 0.012	< 0.012	< 0.014	< 0.012
12-18	< 0.027	< 0.02	< 0.02	< 0.02	< 0.027	< 0.027	< 0.02	< 0.027	< 0.017	< 0.017	< 0.014	< 0.014	< 0.016	< 0.014
12-19	< 0.019	< 0.014	< 0.014	< 0.014	< 0.019	< 0.019	< 0.014	< 0.019	< 0.011	< 0.011	< 0.0092	< 0.0092	< 0.011	< 0.0092
12-20	< 0.031	< 0.023	< 0.023	< 0.023	< 0.031	< 0.031	< 0.023	< 0.031	< 0.018	< 0.018	< 0.015	< 0.015	< 0.018	< 0.015

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)												
Lab ID	**87**	**90/101**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**101**	**103**	**105**	**107**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**1,301,749**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**2,368,794**	**2,368,794**
S (ng/L) [2]	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**
12-1	*< 0.011*	*< 0.011*	*< 0.014*	*< 0.011*	*< 0.014*	*< 0.014*	*< 0.011*	*< 0.011*	*< 0.014*	*< 0.011*	*< 0.014*	*< 0.01*	*< 0.01*
12-2	*< 0.0089*	*< 0.0089*	*< 0.011*	*< 0.0089*	*< 0.011*	*< 0.011*	*< 0.0089*	*< 0.0089*	*< 0.011*	*< 0.0089*	*< 0.011*	**0.0055**	*< 0.0075*
12-3	*< 0.014*	*< 0.014*	*< 0.018*	*< 0.014*	*< 0.018*	*< 0.018*	*< 0.014*	*< 0.014*	*< 0.018*	*< 0.014*	*< 0.018*	*< 0.012*	*< 0.012*
12-4	*< 0.0091*	*< 0.0091*	*< 0.011*	*< 0.0091*	*< 0.011*	*< 0.011*	*< 0.0091*	*< 0.0091*	*< 0.011*	*< 0.0091*	*< 0.011*	*< 0.0078*	*< 0.0078*
12-5	*< 0.097*	*< 0.097*	*< 0.087*	*< 0.097*	*< 0.087*	*< 0.087*	*< 0.097*	*< 0.097*	*< 0.087*	*< 0.097*	*< 0.087*	*< 0.12*	*< 0.12*
12-6	*< 0.015*	*< 0.015*	*< 0.018*	*< 0.015*	*< 0.018*	*< 0.018*	*< 0.015*	*< 0.015*	*< 0.018*	*< 0.015*	*< 0.018*	*< 0.012*	*< 0.012*
12-7	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.011*	*< 0.013*	*< 0.01*	*< 0.01*
12-8	*< 0.0088*	*< 0.0088*	*< 0.011*	*< 0.0088*	*< 0.011*	*< 0.011*	*< 0.0088*	*< 0.0088*	*< 0.011*	*< 0.0088*	*< 0.011*	*< 0.0076*	*< 0.0076*
12-9	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.011*	*< 0.013*	*< 0.0098*	*< 0.0098*
12-10	*< 0.015*	*< 0.015*	*< 0.018*	*< 0.015*	*< 0.018*	*< 0.018*	*< 0.015*	*< 0.015*	*< 0.018*	*< 0.015*	*< 0.018*	*< 0.014*	*< 0.014*
12-11	*< 0.03*	*< 0.03*	*< 0.037*	*< 0.03*	*< 0.037*	*< 0.037*	*< 0.03*	*< 0.03*	*< 0.037*	*< 0.03*	*< 0.037*	*< 0.025*	*< 0.025*
12-12	*< 0.019*	*< 0.019*	*< 0.023*	*< 0.019*	*< 0.023*	*< 0.023*	*< 0.019*	*< 0.019*	*< 0.023*	*< 0.019*	*< 0.023*	*< 0.016*	*< 0.016*
12-13	*< 0.018*	*< 0.018*	*< 0.023*	*< 0.018*	*< 0.023*	*< 0.023*	*< 0.018*	*< 0.018*	*< 0.023*	*< 0.018*	*< 0.023*	**0.025**	*< 0.014*
12-14	*< 0.013*	*< 0.013*	*< 0.016*	*< 0.013*	*< 0.016*	*< 0.016*	*< 0.013*	*< 0.013*	*< 0.016*	*< 0.013*	*< 0.016*	*< 0.011*	*< 0.011*
12-15	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	**0.022**	*< 0.021*
12-16	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.015*	*< 0.015*
12-17	*< 0.012*	*< 0.012*	*< 0.014*	*< 0.012*	*< 0.014*	*< 0.014*	*< 0.012*	*< 0.012*	*< 0.014*	*< 0.012*	*< 0.014*	*< 0.011*	*< 0.011*
12-18	*< 0.014*	*< 0.014*	*< 0.016*	*< 0.014*	*< 0.016*	*< 0.016*	*< 0.014*	*< 0.014*	*< 0.016*	*< 0.014*	*< 0.016*	*< 0.014*	*< 0.014*
12-19	*< 0.0092*	*< 0.0092*	*< 0.011*	*< 0.0092*	*< 0.011*	*< 0.011*	*< 0.0092*	*< 0.0092*	*< 0.011*	*< 0.0092*	*< 0.011*	*< 0.0083*	*< 0.0083*
12-20	*< 0.015*	**0.017**	*< 0.018*	*< 0.015*	*< 0.018*	*< 0.018*	*< 0.015*	*< 0.015*	*< 0.018*	*< 0.015*	*< 0.018*	**0.021**	*< 0.014*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)												
Lab ID	**110**	**114**	**115**	**117**	**118**	**119**	**122**	**123**	**124**	**126**	**128**	**129**	**130**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**2,368,794**	**1,756,011**	**1,756,011**	**2,368,794**	**1,756,011**	**2,368,794**	**2,368,794**	**2,368,794**	**3,195,415**	**4,949,112**	**4,949,112**	**4,949,112**
S (ng/L) [2]	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**1,647**	**1,647**	**1,647**
12-1	*< 0.011*	*< 0.01*	*< 0.011*	*< 0.011*	*< 0.01*	*< 0.011*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.0093*	*< 0.0097*	*< 0.0097*	*< 0.0097*
12-2	*< 0.0089*	*< 0.0075*	*< 0.0089*	*< 0.0089*	*< 0.0075*	*< 0.0089*	*< 0.0075*	*< 0.0075*	*< 0.0075*	*< 0.0067*	*< 0.0063*	*< 0.0063*	*< 0.0063*
12-3	*< 0.014*	*< 0.012*	*< 0.014*	*< 0.014*	*< 0.012*	*< 0.014*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.0097*	*< 0.0081*	*< 0.0081*	*< 0.0081*
12-4	*< 0.0091*	*< 0.0078*	*< 0.0091*	*< 0.0091*	*< 0.0078*	*< 0.0091*	*< 0.0078*	*< 0.0078*	*< 0.0078*	*< 0.007*	*< 0.0068*	*< 0.0068*	*< 0.0068*
12-5	*< 0.097*	*< 0.12*	*< 0.097*	*< 0.097*	*< 0.12*	*< 0.097*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.19*	*< 0.6*	*< 0.6*	*< 0.6*
12-6	*< 0.015*	*< 0.012*	*< 0.015*	*< 0.015*	*< 0.012*	*< 0.015*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.01*	*< 0.0086*	*< 0.0086*	*< 0.0086*
12-7	*< 0.011*	*< 0.01*	*< 0.011*	*< 0.011*	*< 0.01*	*< 0.011*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.012*	*< 0.012*	*< 0.012*
12-8	*< 0.0088*	*< 0.0076*	*< 0.0088*	*< 0.0088*	*< 0.0076*	*< 0.0088*	*< 0.0076*	*< 0.0076*	*< 0.0076*	*< 0.0069*	*< 0.0068*	*< 0.0068*	*< 0.0068*
12-9	*< 0.011*	*< 0.0098*	*< 0.011*	*< 0.011*	*< 0.0098*	*< 0.011*	*< 0.0098*	*< 0.0098*	*< 0.0098*	*< 0.0092*	*< 0.01*	*< 0.01*	*< 0.01*
12-10	*< 0.015*	*< 0.014*	*< 0.015*	*< 0.015*	*< 0.014*	*< 0.015*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.013*	*< 0.014*	*< 0.014*	*< 0.014*
12-11	*< 0.03*	*< 0.025*	*< 0.03*	*< 0.03*	*< 0.025*	*< 0.03*	*< 0.025*	*< 0.025*	*< 0.025*	*< 0.021*	*< 0.019*	*< 0.019*	*< 0.019*
12-12	*< 0.019*	*< 0.016*	*< 0.019*	*< 0.019*	*< 0.016*	*< 0.019*	*< 0.016*	*< 0.016*	*< 0.016*	*< 0.014*	*< 0.012*	*< 0.012*	*< 0.012*
12-13	*< 0.018*	*< 0.014*	*< 0.018*	*< 0.018*	*< 0.014*	*< 0.018*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.011*	*< 0.0087*	*< 0.0087*	*< 0.0087*
12-14	*< 0.013*	*< 0.011*	*< 0.013*	*< 0.013*	**0.016**	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.0089*	*< 0.0075*	*< 0.0075*	*< 0.0075*
12-15	*< 0.02*	*< 0.021*	*< 0.02*	*< 0.02*	*< 0.021*	*< 0.02*	*< 0.021*	*< 0.021*	*< 0.021*	*< 0.026*	*< 0.049*	*< 0.049*	*< 0.049*
12-16	*< 0.014*	*< 0.015*	*< 0.014*	*< 0.014*	*< 0.015*	*< 0.014*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.018*	*< 0.032*	*< 0.032*	*< 0.032*
12-17	*< 0.012*	*< 0.011*	*< 0.012*	*< 0.012*	*< 0.011*	*< 0.012*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.01*	*< 0.011*	*< 0.011*	*< 0.011*
12-18	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.019*	*< 0.019*	*< 0.019*
12-19	*< 0.0092*	*< 0.0083*	*< 0.0092*	*< 0.0092*	*< 0.0083*	*< 0.0092*	*< 0.0083*	*< 0.0083*	*< 0.0083*	*< 0.008*	*< 0.0091*	*< 0.0091*	*< 0.0091*
12-20	*< 0.015*	*< 0.014*	*< 0.015*	*< 0.015*	*< 0.014*	*< 0.015*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.016*	*< 0.016*	*< 0.016*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)												
Lab ID	**131**	**132**	**134**	**135**	**136**	**137**	**138**	**141**	**144**	**146**	**147**	**149**	**151**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**3,931,220**	**3,931,220**	**3,931,220**	**3,931,220**	**4,836,457**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**
S (ng/L) [2]	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**
12-1	*< 0.0092*	*< 0.0092*	*< 0.0092*	*< 0.0092*	*< 0.0096*	*< 0.0097*	*< 0.0097*	*< 0.0097*	*< 0.0092*	*< 0.0097*	*< 0.0092*	*< 0.0092*	*< 0.0092*
12-2	*< 0.0064*	*< 0.0064*	*< 0.0064*	*< 0.0064*	*< 0.0063*	*< 0.0063*	*< 0.0063*	*< 0.0063*	*< 0.0064*	*< 0.0063*	*< 0.0064*	*< 0.0064*	*< 0.0064*
12-3	*< 0.0088*	*< 0.0088*	*< 0.0088*	*< 0.0088*	*< 0.0082*	*< 0.0081*	*< 0.0081*	*< 0.0081*	*< 0.0088*	*< 0.0081*	*< 0.0088*	*< 0.0088*	*< 0.0088*
12-4	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*
12-5	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.56*	*< 0.6*	*< 0.6*	*< 0.6*	*< 0.3*	*< 0.6*	*< 0.3*	*< 0.3*	*< 0.3*
12-6	*< 0.0092*	*< 0.0092*	*< 0.0092*	*< 0.0092*	*< 0.0086*	*< 0.0086*	*< 0.0086*	*< 0.0086*	*< 0.0092*	*< 0.0086*	*< 0.0092*	*< 0.0092*	*< 0.0092*
12-7	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.011*	*< 0.012*	*< 0.011*	*< 0.011*	*< 0.011*
12-8	*< 0.0067*	*< 0.0067*	*< 0.0067*	*< 0.0067*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0067*	*< 0.0068*	*< 0.0067*	*< 0.0067*	*< 0.0067*
12-9	*< 0.0094*	*< 0.0094*	*< 0.0094*	*< 0.0094*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.0094*	*< 0.01*	*< 0.0094*	*< 0.0094*	*< 0.0094*
12-10	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.013*	*< 0.014*	*< 0.013*	*< 0.013*	*< 0.013*
12-11	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.02*	*< 0.019*	*< 0.02*	*< 0.02*	*< 0.02*
12-12	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.013*	*< 0.012*	*< 0.013*	*< 0.013*	*< 0.013*
12-13	*< 0.0099*	**0.0072**	*< 0.0099*	*< 0.0099*	*< 0.0088*	*< 0.0087*	*< 0.0087*	*< 0.0087*	*< 0.0099*	*< 0.0087*	*< 0.0099*	*< 0.0099*	*< 0.0099*
12-14	*< 0.0081*	**0.0046**	*< 0.0081*	*< 0.0081*	*< 0.0075*	*< 0.0075*	*< 0.0075*	*< 0.0075*	*< 0.0081*	*< 0.0075*	*< 0.0081*	*< 0.0081*	*< 0.0081*
12-15	*< 0.033*	*< 0.033*	*< 0.033*	*< 0.033*	*< 0.047*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.033*	*< 0.049*	*< 0.033*	*< 0.033*	*< 0.033*
12-16	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.031*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.022*	*< 0.032*	*< 0.022*	*< 0.022*	*< 0.022*
12-17	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.01*	*< 0.011*	*< 0.01*	*< 0.01*	*< 0.01*
12-18	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.018*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.015*	*< 0.019*	*< 0.015*	*< 0.015*	*< 0.015*
12-19	*< 0.0083*	*< 0.0083*	*< 0.0083*	*< 0.0083*	*< 0.009*	*< 0.0091*	*< 0.0091*	*< 0.0091*	*< 0.0083*	*< 0.0091*	*< 0.0083*	*< 0.0083*	*< 0.0083*
12-20	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.016*	*< 0.016*	*< 0.016*	*< 0.016*	*< 0.014*	*< 0.016*	*< 0.014*	*< 0.014*	*< 0.014*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)												
Lab ID	**153**	**156**	**157**	**158**	**163**	**164**	**165**	**167**	**169**	**170**	**171**	**172**	**173**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**4,949,112**	**6,375,692**	**6,375,692**	**4,949,112**	**4,949,112**	**4,949,112**	**4,949,112**	**6,375,692**	**8,213,482**	**13,630,987**	**11,079,682**	**13,630,987**	**11,079,682**
S (ng/L) [2]	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**367**	**367**	**367**	**367**
12-1	*< 0.0097*	*< 0.011*	*< 0.011*	*< 0.0097*	*< 0.0097*	*< 0.0097*	*< 0.0097*	*< 0.011*	*< 0.014*	*< 0.038*	*< 0.023*	*< 0.038*	*< 0.023*
12-2	*< 0.0063*	*< 0.0067*	*< 0.0067*	*< 0.0063*	*< 0.0063*	*< 0.0063*	*< 0.0063*	*< 0.0067*	*< 0.0077*	*< 0.015*	*< 0.011*	*< 0.015*	*< 0.011*
12-3	*< 0.0081*	*< 0.0077*	*< 0.0077*	*< 0.0081*	*< 0.0081*	*< 0.0081*	*< 0.0081*	*< 0.0077*	*< 0.0079*	*< 0.01*	*< 0.0088*	*< 0.01*	*< 0.0088*
12-4	*< 0.0068*	*< 0.0074*	*< 0.0074*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0074*	*< 0.0088*	*< 0.019*	*< 0.013*	*< 0.019*	*< 0.013*
12-5	*< 0.6*	*NC*	*NC*	*< 0.6*	*< 0.6*	*< 0.6*	*< 0.6*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-6	*< 0.0086*	*< 0.0083*	*< 0.0083*	*< 0.0086*	*< 0.0086*	*< 0.0086*	*< 0.0086*	*< 0.0083*	*< 0.0086*	*< 0.012*	*< 0.0099*	*< 0.012*	*< 0.0099*
12-7	*< 0.012*	*< 0.015*	*< 0.015*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.015*	*< 0.022*	*NC*	*< 0.044*	*NC*	*< 0.044*
12-8	*< 0.0068*	*< 0.0075*	*< 0.0075*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0068*	*< 0.0075*	*< 0.0091*	*< 0.02*	*< 0.013*	*< 0.02*	*< 0.013*
12-9	*< 0.01*	*< 0.012*	*< 0.012*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.012*	*< 0.016*	*< 0.049*	*< 0.028*	*< 0.049*	*< 0.028*
12-10	*< 0.014*	*< 0.017*	*< 0.017*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.017*	*< 0.024*	*NC*	*< 0.043*	*NC*	*< 0.043*
12-11	*< 0.019*	*< 0.02*	*< 0.02*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.02*	*< 0.021*	*< 0.036*	*< 0.027*	*< 0.036*	*< 0.027*
12-12	*< 0.012*	*< 0.013*	*< 0.013*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.013*	*< 0.014*	*< 0.024*	*< 0.018*	*< 0.024*	*< 0.018*
12-13	**0.02**	*< 0.0077*	*< 0.0077*	*< 0.0087*	*< 0.0087*	*< 0.0087*	*< 0.0087*	*< 0.0077*	*< 0.0072*	*< 0.0074*	*< 0.0071*	*< 0.0074*	*< 0.0071*
12-14	*< 0.0075*	*< 0.0073*	*< 0.0073*	*< 0.0075*	*< 0.0075*	*< 0.0075*	*< 0.0075*	*< 0.0073*	*< 0.0075*	*< 0.011*	*< 0.0087*	*< 0.011*	*< 0.0087*
12-15	*< 0.049*	*< 0.09*	*< 0.09*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.09*	*NC*	*NC*	*NC*	*NC*	*NC*
12-16	*< 0.032*	*< 0.058*	*< 0.058*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.058*	*NC*	*NC*	*NC*	*NC*	*NC*
12-17	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.017*	*< 0.051*	*< 0.029*	*< 0.051*	*< 0.029*
12-18	*< 0.019*	*< 0.026*	*< 0.026*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.019*	*< 0.026*	*< 0.042*	*NC*	*NC*	*NC*	*NC*
12-19	*< 0.0091*	*< 0.011*	*< 0.011*	*< 0.0091*	*< 0.0091*	*< 0.0091*	*< 0.0091*	*< 0.011*	*< 0.016*	*< 0.053*	*< 0.029*	*< 0.053*	*< 0.029*
12-20	**0.026**	*< 0.021*	*< 0.021*	*< 0.016*	*< 0.016*	*< 0.016*	*< 0.016*	*< 0.021*	*< 0.03*	*NC*	*< 0.059*	*NC*	*< 0.059*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)											
Lab ID	174	175	176	177	178	179	180	183	184	185	187	189
Homolog	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta	Hepta
K_{fs} (L/L_{PDMS}) [1]	11,079,682	11,079,682	14,273,396	11,079,682	11,079,682	14,273,396	13,630,987	11,079,682	14,273,396	11,079,682	11,079,682	17,160,396
S (ng/L) [2]	367	367	367	367	367	367	367	367	367	367	367	367
12-1	< 0.023	< 0.023	< 0.043	< 0.023	< 0.023	< 0.043	< 0.038	< 0.023	< 0.043	< 0.023	NC	NC
12-2	< 0.011	< 0.011	< 0.016	< 0.011	< 0.011	< 0.016	< 0.015	< 0.011	< 0.016	< 0.011	NC	< 0.026
12-3	< 0.0088	< 0.0088	< 0.011	< 0.0088	< 0.0088	< 0.011	< 0.01	< 0.0088	< 0.011	< 0.0088	NC	< 0.014
12-4	< 0.013	< 0.013	< 0.021	< 0.013	< 0.013	< 0.021	< 0.019	< 0.013	< 0.021	< 0.013	NC	< 0.034
12-5	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
12-6	< 0.0099	< 0.0099	< 0.013	< 0.0099	< 0.0099	< 0.013	< 0.012	< 0.0099	< 0.013	< 0.0099	NC	< 0.017
12-7	< 0.044	< 0.044	NC	< 0.044	< 0.044	NC	NC	< 0.044	NC	< 0.044	NC	NC
12-8	< 0.013	< 0.013	< 0.023	< 0.013	< 0.013	< 0.023	< 0.02	< 0.013	< 0.023	< 0.013	NC	< 0.038
12-9	< 0.028	< 0.028	< 0.056	< 0.028	< 0.028	< 0.056	< 0.049	< 0.028	< 0.056	< 0.028	NC	NC
12-10	< 0.043	< 0.043	NC	< 0.043	< 0.043	NC	NC	< 0.043	NC	< 0.043	NC	NC
12-11	< 0.027	< 0.027	< 0.039	< 0.027	< 0.027	< 0.039	< 0.036	< 0.027	< 0.039	< 0.027	NC	< 0.056
12-12	< 0.018	< 0.018	< 0.026	< 0.018	< 0.018	< 0.026	< 0.024	< 0.018	< 0.026	< 0.018	NC	< 0.037
12-13	< 0.0071	< 0.0071	< 0.0075	< 0.0071	< 0.0071	< 0.0075	< 0.0074	< 0.0071	< 0.0075	< 0.0071	NC	< 0.0083
12-14	< 0.0087	< 0.0087	< 0.011	< 0.0087	< 0.0087	< 0.011	< 0.011	< 0.0087	< 0.011	< 0.0087	NC	< 0.015
12-15	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
12-16	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
12-17	< 0.029	< 0.029	< 0.059	< 0.029	< 0.029	< 0.059	< 0.051	< 0.029	< 0.059	< 0.029	NC	NC
12-18	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
12-19	< 0.029	< 0.029	< 0.062	< 0.029	< 0.029	< 0.062	< 0.053	< 0.029	< 0.062	< 0.029	NC	NC
12-20	< 0.059	< 0.059	NC	< 0.059	< 0.059	NC	NC	< 0.059	NC	< 0.059	NC	NC

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)								
Lab ID	190	191	193	194	195	196	197	199	200
Homolog	Hepta	Hepta	Hepta	Octa	Octa	Octa	Octa	Octa	Octa
K_{fs} (L/L_{PDMS}) [1]	13,630,987	13,630,987	13,630,987	37,542,856	31,226,788	31,226,788	41,164,924	41,164,924	41,164,924
S (ng/L) [2]	367	367	367	81	81	81	81	81	81
12-1	*< 0.038*	*< 0.038*	*< 0.038*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-2	*< 0.015*	*< 0.015*	*< 0.015*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-3	*< 0.01*	*< 0.01*	*< 0.01*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-4	*< 0.019*	*< 0.019*	*< 0.019*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-5	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-6	*< 0.012*	*< 0.012*	*< 0.012*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-7	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-8	*< 0.02*	*< 0.02*	*< 0.02*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-9	*< 0.049*	*< 0.049*	*< 0.049*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-10	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-11	*< 0.036*	*< 0.036*	*< 0.036*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-12	*< 0.024*	*< 0.024*	*< 0.024*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-13	*< 0.0074*	*< 0.0074*	*< 0.0074*	*NC*	*< 0.018*	*< 0.018*	*NC*	*NC*	*NC*
12-14	*< 0.011*	*< 0.011*	*< 0.011*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-15	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-16	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-17	*< 0.051*	*< 0.051*	*< 0.051*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-18	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-19	*< 0.053*	*< 0.053*	*< 0.053*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-20	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)						
Lab ID	**201**	**202**	**203**	**205**	**206**	**207**	**208**
Homolog	**Octa**	**Octa**	**Octa**	**Octa**	**Nona**	**Nona**	**Nona**
K_{fs} (L/L_{PDMS}) [1]	**31,226,788**	**41,164,924**	**31,226,788**	**37,542,856**	**84,047,986**	**113,377,614**	**113,377,614**
S (ng/L) [2]	**81**	**81**	**81**	**81**	**18**	**18**	**18**
12-1	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-2	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-3	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-4	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-5	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-6	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-7	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-8	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-9	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-10	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-11	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-12	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-13	*< 0.018*	*NC*	*< 0.018*	*NC*	*NC*	*NC*	*NC*
12-14	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-15	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-16	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-17	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-18	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-19	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
12-20	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*

Notes:

1 K_{fs} (L/L_{PDMS}) is the Fiber PDMS-Solution Water Partition Coefficient (**Table 4**)
2 Approximate solubility limit (S) from **Table 4**.
3 Concentrations of freely dissolved PCBs in sediment porewater are calculated by adjusting the concentration of PCBs in PDMS to reflect concentrations at steady state using model-predicted CFs (**Table 6**), according to the following equation:

$$[PCB\ Congeners_{Sediment\ Porewater}] = \frac{CF \times [PCB\ Congeners_{PDMS}] \times 1{,}000{,}000 \mu L/L}{K_{fs}}$$

4 Concentrations for samples with relationships that are not stong (**Table 7**) and/or negative $Log_{10}CF$ values (**Table 8**) are calculated for demonstration purposes only.
5 NC = Not Calculated.
6 NC results were not calculated because conditions were insufficient to reach 1% of steady state, as described in **Table 7**. The exception is PCB-187 which was not calculated for reasons detailed in **Table 5**.
7 PCB = polychlorobiphenyl
8 L = liter
9 PDMS = polydimethylsiloxane
10 ng = nanogram
11 µL = microliter

Table 10. Concentrations of Freely-dissolved PCB Homologs in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Lab ID	Sample ID	Station ID	Deployment Type	Concentration of PCB Homologs in Sediment Porewater [1] (ng $_{PCB}$/L $_{Porewater}$)									
				Mono	Di	Tri	Tetra	Penta	Hexa	Hepta	Octa	Nona	Total Tetra-Hexa PCBs [2]
12-1	B12-1-MM-SPME-Core	B12-1-MM	Core	*< 0.76*	*< 0.14*	*< 0.12*	*< 0.035*	*< 0.014*	*< 0.014*	*< 0.043*	*NC*	*NC*	*< 0.035*
12-2	B12-2-MM-SPME-Core	B12-2-MM	Core	*< 0.65*	*< 0.12*	*< 0.1*	*< 0.029*	**0.0055**	*< 0.0077*	*< 0.026*	*NC*	*NC*	**0.0055**
12-3	B12-3-MM-SPME-Core	B12-3-MM	Core	*< 1.2*	*< 0.22*	*< 0.18*	*< 0.052*	*< 0.018*	*< 0.0088*	*< 0.014*	*NC*	*NC*	*< 0.052*
12-4	B12-4-MM-SPME-Core	B12-4-MM	Core	*< 0.65*	*< 0.12*	*< 0.1*	*< 0.029*	*< 0.011*	*< 0.0088*	*< 0.034*	*NC*	*NC*	*< 0.029*
12-5	B12-5-MM-SPME-Core	B12-5-MM	Core	*< 2.2*	*< 0.44*	*< 0.36*	*< 0.13*	*< 0.19*	*< 0.6*	*NC*	*NC*	*NC*	*< 0.13*
12-6	B12-6-MM-SPME-Core	B12-6-MM	Core	*< 1.2*	*< 0.23*	*< 0.18*	*< 0.052*	*< 0.018*	*< 0.0092*	*< 0.017*	*NC*	*NC*	*< 0.052*
12-7	B12-7-MM-SPME-Core	B12-7-MM	Core	*< 0.68*	*< 0.13*	*< 0.11*	*< 0.032*	*< 0.013*	*< 0.022*	*< 0.044*	*NC*	*NC*	*< 0.032*
12-8	B12-8-MM-SPME-Core	B12-8-MM	Core	*< 0.62*	*< 0.12*	*< 0.096*	*< 0.028*	*< 0.011*	*< 0.0091*	*< 0.038*	*NC*	*NC*	*< 0.028*
12-9	B12-9-MM-SPME-Core	B12-9-MM	Core	*< 0.7*	*< 0.13*	*< 0.11*	*< 0.032*	*< 0.013*	*< 0.016*	*< 0.056*	*NC*	*NC*	*< 0.032*
12-10	B12-10-MM-SPME-Core	B12-10-MM	Core	*< 0.96*	*< 0.18*	*< 0.15*	*< 0.044*	*< 0.018*	*< 0.024*	*< 0.043*	*NC*	*NC*	*< 0.044*
12-11	B12-1-MM-SPME-SR	B12-1-MM	SEA Ring	*< 2.3*	*< 0.43*	*< 0.35*	*< 0.1*	*< 0.037*	*< 0.021*	*< 0.056*	*NC*	*NC*	*< 0.1*
12-12	B12-2-MM-SPME-SR	B12-2-MM	SEA Ring	*< 1.4*	*< 0.27*	*< 0.22*	*< 0.063*	*< 0.023*	*< 0.014*	*< 0.037*	*NC*	*NC*	*< 0.063*
12-13	B12-3-MM-SPME-SR	B12-3-MM	SEA Ring	*< 1.6*	*< 0.3*	*< 0.25*	*< 0.068*	**0.025**	**0.027**	*< 0.0083*	*< 0.018*	*NC*	**0.052**
12-14	B12-4-MM-SPME-SR	B12-4-MM	SEA Ring	*< 1*	*< 0.2*	*< 0.16*	*< 0.045*	**0.016**	**0.0046**	*< 0.015*	*NC*	*NC*	**0.021**
12-15	B12-5-MM-SPME-SR	B12-5-MM	SEA Ring	*< 0.73*	*< 0.14*	*< 0.12*	*< 0.038*	**0.022**	*< 0.09*	*NC*	*NC*	*NC*	**0.022**
12-16	B12-6-MM-SPME-SR	B12-6-MM	SEA Ring	*< 0.61*	*< 0.11*	*< 0.092*	*< 0.027*	*< 0.018*	*< 0.058*	*NC*	*NC*	*NC*	*< 0.027*
12-17	B12-7-MM-SPME-SR	B12-7-MM	SEA Ring	*< 0.76*	*< 0.15*	*< 0.12*	*< 0.035*	*< 0.014*	*< 0.017*	*< 0.059*	*NC*	*NC*	*< 0.035*
12-18	B12-8-MM-SPME-SR	B12-8-MM	SEA Ring	*< 0.75*	*< 0.14*	*< 0.12*	*< 0.036*	*< 0.016*	*< 0.042*	*NC*	*NC*	*NC*	*< 0.036*
12-19	B12-9-MM-SPME-SR	B12-9-MM	SEA Ring	*< 0.61*	*< 0.11*	*< 0.092*	*< 0.026*	*< 0.011*	*< 0.016*	*< 0.062*	*NC*	*NC*	*< 0.026*
12-20	B12-10-MM-SPME-SR	B12-10-MM	SEA Ring	*< 0.9*	*< 0.17*	*< 0.14*	*< 0.042*	**0.038**	**0.026**	*< 0.059*	*NC*	*NC*	**0.064**
Average Method Detection Limit for Non-Detect Results				0.63	0.15	0.078	0.034	0.019	0.034	0.025	0.018	-	-

Notes:

1 The concentration of PCB Homologs in each sample were calculated as the sum of the detected PCB congeners (**Table 9**). If no congeners were detected, the maximum detection limit for the congeners within the homolog group is reported.

2 Total Tetra-Hexa PCBs was calculated as the sum of the detected PCB homologs. If concentrations were non-detect for all homologs, Total Tetra-Hexa PCBs were assumed to be equal to the highest homolog detection limit.

3 All stations are located within the target amendment area.

4 NC results were not calculated because conditions were insufficient to reach 1% of steady state, as described in **Table 8**.

5 ng = nanogram

6 L = liter

7 PCB = polychlorobiphenyl

8 NC = Not Calculated

Table 1. SPME Fiber Measurements in the 21-Month Event.
SPAWAR Systems Center Pacific
San Diego, California

Hexane Extract Vial Number	Sample ID	Station ID	Sample Type	Total Fiber Length (cm)	Percent Recovery
22-1	Trip Blank 3	NA	Trip Blank	212.7	106%
22-2	Trip Blank 2	NA	Trip Blank	200.3	100%
22-3	Trip Blank 1	NA	Trip Blank	198.3	99%
22-4	B22-8-MM-SR	8-MM	SEA Ring	199.1	100%
22-5	B22-7-MM-SR	7-MM	SEA Ring	199.5	100%
22-6	B22-6-MM-SR	6-MM	SEA Ring	197.5	99%
22-7	B22-5-MM-SR	5-MM	SEA Ring	198.9	99%
22-8	B22-4-MM-SR	4-MM	SEA Ring	199.2	100%
22-9	B22-2-MM-SR	2-MM	SEA Ring	199.1	100%
22-10	B22-3-MM-SR	3-MM	SEA Ring	200.3	100%
22-11	B22-1R-MM-SR	1R-MM	SEA Ring	195.7	98%
22-12	B22-1-MM-SR	1-MM	SEA Ring	198.8	99%
22-13	B22-9-MM-SR	9-MM	SEA Ring	179.8	90%
22-14	B22-1R-MM-Core	1R-MM	Core	393.9	98%
22-15	B22-3-MM-Core	3-MM	Core	398	100%
22-16	B22-10-MM-Core	10-MM	Core	370.9	93%
22-17	B22-8-MM-Core	8-MM	Core	393.7	98%
22-18	B22-4-MM-Core	4-MM	Core	384.9	96%
22-19	B22-6-MM-Core	6-MM	Core	382.8	96%
22-20 [1]	B22-1-MM-Core	1-MM	Core	229.8	57%
22-21	B22-9-DUP-MM-Core	9-DUP-MM	Core	391.4	98%
22-22	B22-5-MM-Core	5-MM	Core	392.7	98%
22-23	B22-2-MM-Core	2-MM	Core	394	99%
22-24	B22-7-MM-Core	7-MM	Core	397.1	99%
22-25	B22-9-MM-Core	9-MM	Core	398.8	100%
22-26	Hexane Blank	NA	Lab Blank	0	NA

Notes:

1 One envelope on Sample ID B22-1 (hexane vial ID 22-20) was severely bent by a mussel.

2 Samples were processed on July 23, 2014 at Space and Naval Warfare Systems Center Pacific (SSC Pacific) in Point Loma by Jason Conder and Melissa Grover (ENVIRON) and Victoria Kirtay (SSC Pacific).

3 Each envelope contained 16 fibers at 12.5 cm in length for a total length of 200 cm per envelope. The core samples had two envelopes.

4 Abbreviations:
cm = centimeter
NA = not applicable
SEA Ring = Sediment Ecotoxicity Assessment Ring
SPME = solid phase microextraction

Table 2. SPME Envelope Sediment Contact Measurements.
SPAWAR Systems Center Pacific
San Diego, California

Sample ID	Depth of Sediment in Core (cm)	Length of Envelope Below Sediment Surface (cm)	Length of Envelope Above Sediment Surface [1] (cm)	Percent of Envelope Below Sediment Surface	Sample Notes
B22-1-MM-SR	12	12	2	86%	
B22-1R-MM-SR	12	12	2	86%	
B22-2-MM-SR	0	0	14	0%	No sediment was present because diver did not cap the core.
B22-3-MM-SR	0	0	14	0%	No sediment was present because diver did not cap the core.
B22-4-MM-SR	0	0	14	0%	No sediment was present because diver did not cap the core.
B22-5-MM-SR	9	9	5	64%	
B22-6-MM-SR	9	9	5	64%	
B22-7-MM-SR	15	14	0	100%	
B22-8-MM-SR	2	2	12	14%	Cap was on the bottom of the tube; however, residual sediment on the envelope indicate there was additional length of envelope below the sediment surface in-situ.
B22-9-MM-SR	0	0	14	0%	No sediment was present because diver did not cap the core.
B22-10-MM-SR	NA	NA	NA	NA	Sample ID B22-10-MM-SR was not recovered from the SEA Ring.
B22-1R-MM-Core	10.8	10.8	4.2	77%	
B22-1-MM-Core	12.2	12.2	0.8	87%	
B22-2-MM-Core	8.6	8.6	7.1	61%	
B22-3-MM-Core	13.8	13.8	1.4	99%	
B22-4-MM-Core	10.4	10.4	5.2	74%	
B22-5-MM-Core	14.6	14.0	1.4	100%	
B22-6-MM-Core	7.7	7.7	8.6	55%	
B22-7-MM-Core	12.0	12.0	3.1	86%	
B22-8-MM-Core	10.4	10.4	4.9	74%	
B22-9-MM-Core	10.1	10.1	5.1	72%	
B22-9-DUP-MM-Core	8.5	8.5	6.3	61%	
B22-10-MM-Core	17.6	14.0	0.0	100%	

Notes:

[1] Length of envelope above the sediment surface for the core samples is the average for the two envelopes. Only one envelope was observed above the sediment for Sample ID B22-1-MM-Core due to one envelope being severely bent by a mussel.

[2] The length of the envelope was not measured. The length of the envelope is assumed to be 14 cm.

[3] Depth of sediment in core was measured in the field upon retrieval. For the SPME samples in SEA Ring chambers, depth of sediment was measured by associates from SPAWAR (Renee/Lewis). For SPME samples in separately deployed in core liners, the depth of sediment in the core liner was measured by Jason Conder and Melissa Grover (ENVIRON).

[4] Length of envelope below sediment surface was not measured. It is assumed to be equal to the depth of sediment. If the depth of sediment exceeds 14 cm, the length of envelope below the sediment surface is assumed to be 14 cm.

[5] For the SPME samples in the SEA Ring chambers, length of envelope above the sediment surface was estimated based on the assumed envelope length of 14 cm. For the SPME samplers deployed outside of the SEA Ring in core liners, the length of envelope above the sediment surface was measured in the field.

[6] Percent of envelope below sediment surface is calculated as the length of envelope below sediment surface divided by the assumed length of envelope (14 cm).

[7] For the SPME samplers deployed outside of the SEA Ring in core liners, the sediment was discarded.

[8] Abbreviations:
cm = centimeter
NA = not applicable
SEA Ring = Sediment Ecotoxicity Assessment Ring
SPME = solid phase microextraction

Table 3. Details for 21-Month SPME Sampling Event.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Station ID	Hexane Extract Vial Number	Sample ID	Sample Type	Retrieval Date	Retrieval Time
22-12	1-MM	22-12	B22-1-MM-SR	SEA Ring	7/16/2014	10:25
22-11	1R-MM	22-11	B22-1R-MM-SR	SEA Ring	7/16/2014	10:09
22-9	2-MM	22-9	B22-2-MM-SR	SEA Ring	7/15/2014	9:55
22-10	3-MM	22-10	B22-3-MM-SR	SEA Ring	7/15/2014	8:50
22-8	4-MM	22-8	B22-4-MM-SR	SEA Ring	7/15/2014	10:19
22-7	5-MM	22-7	B22-5-MM-SR	SEA Ring	7/15/2014	10:43
22-6	6-MM	22-6	B22-6-MM-SR	SEA Ring	7/15/2014	12:59
22-5	7-MM	22-5	B22-7-MM-SR	SEA Ring	7/15/2014	13:31
22-4	8-MM	22-4	B22-8-MM-SR	SEA Ring	7/15/2014	13:05
22-13	9-MM	22-13	B22-9-MM-SR	SEA Ring	7/16/2014	8:45
NA	10-MM	NA	B22-10-MM-SR	SEA Ring	NA	NA
22-20	1-MM	22-20	B22-1-MM-Core	Core	7/16/2014	10:49
22-14	1R-MM	22-14	B22-1R-MM-Core	Core	7/16/2014	9:18
22-23	2-MM	22-23	B22-2-MM-Core	Core	7/15/2014	9:17
22-15	3-MM	22-15	B22-3-MM-Core	Core	7/15/2014	8:50
22-18	4-MM	22-18	B22-4-MM-Core	Core	7/15/2014	10:26
22-22	5-MM	22-22	B22-5-MM-Core	Core	7/15/2014	10:43
22-19	6-MM	22-19	B22-6-MM-Core	Core	7/15/2014	12:45
22-24	7-MM	22-24	B22-7-MM-Core	Core	7/15/2014	13:31
22-17	8-MM	22-17	B22-8-MM-Core	Core	7/15/2014	13:05
22-25	9-MM	22-25	B22-9-MM-Core	Core	7/16/2014	8:45
22-21	9-DUP-MM	22-21	B22-9-DUP-MM-Core	Core	7/16/2014	8:45
22-16	10-MM	22-16	B22-10-MM-Core	Core	7/16/2014	9:01
22-3	Trip Blank 1	22-3	Trip Blank 1	Trip Blank	NA	NA
22-2	Trip Blank 2	22-2	Trip Blank 2	Trip Blank	NA	NA
22-1	Trip Blank 3	22-1	Trip Blank 3	Trip Blank	NA	NA
22-26	Hexane Blank	22-26	Hexane Blank	Lab Blank	NA	NA

Notes:

[1] SPMEs were deployed July 1 and 2, 2014 and retrieved July 15 and 16, 2014. Sample ID B22-10-MM-SR was not retrieved from SEA Ring because sample could not be located/was not present.

[2] Abbreviations:
cm = centimeter
SEA Ring = Sediment Ecotoxicity Assessment Ring
SPME = solid phase microextraction

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-1	2051-60-7	Mono	4.23	16,982	16,388	2.48	2,480,000	Planar	
PCB-3	2051-62-9	Mono	4.87	74,131	71,536	2.48	2,480,000	Planar	
PCB-5	16605-91-7	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-6	25569-80-6	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-7	33284-50-3	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-8	34883-43-7	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-9	34883-39-1	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-12	2974-92-7	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-13	2974-90-5	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-14	34883-41-5	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-15	2050-68-2	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-16	38444-78-9	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-17	37680-66-3	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-18	37680-65-2	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-19	38444-73-4	Tri	5.05	112,202	108,275	0.13991	139,910	Non-planar	
PCB-20	38444-84-7	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-22	38444-85-8	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-24	55702-45-9	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-25	55712-37-3	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-26	38444-81-4	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-27	38444-76-7	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-28	7012-37-5	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-29	15862-07-4	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	Performance Reference Compound [5]
PCB-31	16606-02-3	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-32	38444-77-8	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-33	38444-86-9	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-34	37680-68-5	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-35	37680-69-6	Tri	5.69	489,779	472,637	0.13991	139,910	Planar	
PCB-37	38444-90-5	Tri	5.69	489,779	472,637	0.13991	139,910	Planar	
PCB-40	38444-93-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-41	52663-59-9	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-42	36559-22-5	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-44	41464-39-5	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-45	70362-45-7	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-46	41464-47-5	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-47	2437-79-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-48	70362-47-9	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-49	41464-40-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-51	68194-04-7	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-52	35693-99-3	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-53	41464-41-9	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-54	15968-05-5	Tetra	5.66	457,088	441,090	0.032245	32,245	Non-planar	
PCB-56	41464-43-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-59	74472-33-6	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-60	33025-41-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-63	74472-34-7	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-64	52663-58-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-66	32598-10-0	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-67	73575-53-8	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-69	60233-24-1	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	Performance Reference Compound [5]
PCB-70	32598-11-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-71	41464-46-4	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-73	74338-23-1	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-74	32690-93-0	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-75	32598-12-2	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-77	32598-13-3	Tetra	6.10	1,258,925	1,214,863	0.032245	32,245	Planar	
PCB-81	70362-50-4	Tetra	6.10	1,258,925	1,214,863	0.032245	32,245	Planar	
PCB-82	52663-62-4	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-83	60145-20-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-84	52663-60-2	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-85	65510-45-4	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-87	38380-02-8	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-90/101	68194-07-0/ 37680-73-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-91	68194-05-8	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-92	52663-61-3	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-93	73575-56-1	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-95	38379-99-6	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-97	41464-51-1	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-99	38380-01-7	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-100	39485-83-1	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-101	37680-73-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-103	60145-21-3	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-104	56558-16-8	Penta	6.20	1,584,893	1,529,422	0.0073282	7,328	Non-planar	Performance Reference Compound [5]
PCB-105	32598-14-4	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-107	70424-68-9	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-110	38380-03-9	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-114	74472-37-0	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-115	74472-38-1	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-117	68194-11-6	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-118	31508-00-6	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-119	56558-17-9	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-122	76842-07-4	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-123	65510-44-3	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-124	70424-70-3	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-126	57465-28-8	Penta	6.52	3,311,311	3,195,415	0.0073282	7,328	Planar	
PCB-128	38380-07-3	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-129	55215-18-4	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-130	52663-66-8	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-131	61798-70-7	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-132	38380-05-1	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-134	52704-70-8	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-135	52744-13-5	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-136	38411-22-2	Hexa	6.70	5,011,872	4,836,457	0.0016469	1,647	Non-planar	
PCB-137	35694-06-5	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-138	35065-28-2	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-141	52712-04-6	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-144	68194-14-9	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-146	51908-16-8	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-147	68194-13-8	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-149	38380-04-0	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-151	52663-63-5	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-153	35065-27-1	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-154	60145-22-4	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	Performance Reference Compound [5]
PCB-156	38380-08-4	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-157	69782-90-7	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-158	74472-42-7	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-163	74472-44-9	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-164	74472-45-0	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-165	74472-46-1	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-167	52663-72-6	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-169	32774-16-6	Hexa	6.93	8,511,380	8,213,482	0.0016469	1,647	Planar	
PCB-170	35065-30-6	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-171	52663-71-5	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-172	52663-74-8	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-173	68194-16-1	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-174	38411-25-5	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-175	40186-70-7	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-176	52663-65-7	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-177	52663-70-4	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-178	52663-67-9	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-179	52663-64-6	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-180	35065-29-3	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-183	52663-69-1	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-184	74472-48-3	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-185	52712-05-7	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-187	52663-68-0	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-189	39635-31-9	Hepta	7.25	17,782,794	17,160,396	0.00036674	367	Planar	
PCB-190	41411-64-7	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-191	74472-50-7	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-193	69782-91-8	Hepta	7.15	14,125,375	13,630,987	0.000366740	367	Non-planar	
PCB-194	35694-08-7	Octa	7.59	38,904,514	37,542,856	0.000081049	81	Non-planar	
PCB-195	52663-78-2	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-196	42740-50-1	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-197	33091-17-7	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-199	52663-75-9	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-200	52663-73-7	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-201	40186-71-8	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-202	2136-99-4	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-203	52663-76-0	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-205	74472-53-0	Octa	7.59	38,904,514	37,542,856	0.000081049	81	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-206	40186-72-9	Nona	7.94	87,096,359	84,047,986	0.000017797	18	Non-planar	
PCB-207	52663-79-3	Nona	8.07	117,489,755	113,377,614	0.000017797	18	Non-planar	
PCB-208	52663-77-1	Nona	8.07	117,489,755	113,377,614	0.000017797	18	Non-planar	
PCB-209	2051-24-3	Deca	8.51	323,593,657	312,267,879	0.0000038862	4	Non-planar	Spike Recovery Standard [6]

Notes:
1 Log K_{fs} = Log_{10} Fiber PDMS-Solution Partition Coefficient. Referenced from Smedes et al. 2009.
2 K_{fs} = Fiber PDMS-Solution Water Partition Coefficient
3 Converted L with the density of PDMS = 0.965 kg/L
4 S = Solubility Limit in Water. Predicted using EpiWin.
5 All SPMEs were loaded with Performance Reference Compounds (24-h tumble in 900 mL 80:20 methanol:MQ water solution (0.2 µg/mL)) prior to deployment.
6 Spike recovery standard added to 1.8-mL extracts prior to pre-concentration; used to correct for PCB loss during pre-concentration step.
7 PCB = polychlorobiphenyl
8 SPME = solid phase microextraction
9 PDMS = polydimethylsiloxane
10 L = liter
11 kg = kilogram
12 ng = nanogram
13 mg = milligram

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Sample ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																					
		1	3	5	6	7	8	9	12	13	14	15	16	17	18	19	20	22	24	25	26	27	28/31
22-1	Trip Blank 3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-2	Trip Blank 2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-3	Trip Blank 1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-4	B22-8-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-5	B22-7-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-6	B22-6-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-7	B22-5-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-8	B22-4-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-9	B22-2-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-10	B22-3-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-11	B22-1R-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-12	B22-1-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-13	B22-9-MM-SR	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-14	B22-1R-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-15	B22-3-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-16	B22-10-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-17	B22-8-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-18	B22-4-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-19	B22-6-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-20	B22-1-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-21	B22-9-DUP-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-22	B22-5-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-23	B22-2-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-24	B22-7-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-25	B22-9-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-26	Hexane Blank	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																								
	29	**32**	**33**	**34**	**35**	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**
22-1	**9.36**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-2	**9.01**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-3	**14.70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.09**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-4	**0.92**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-5	**1.21**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-6	**1.94**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.07**	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-7	**4.44**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-8	**3.08**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-9	**9.44**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.07**	**0.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-10	**6.84**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-11	**8.35**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-12	**3.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-13	**1.60**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-14	**9.38**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	**0.04**	*ND*	*ND*	**0.08**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-15	**14.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-16	**12.70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*	*ND*	**0.07**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-17	**3.36**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-18	**9.55**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-19	**3.58**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-20	**6.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-21	**11.50**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-22	**0.94**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	**0.01**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-23	**16.60**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-24	**5.75**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*	*ND*	*ND*	**0.02**	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-25	**4.96**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																								
	67/100	69	70	71	73	74	75	77	81/117	82	83	84	85	87/115	90/101	91	92	93	95	97	99	103	104	105/132/153	107
22-1	ND	9.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.10	0.04	ND
22-2	ND	8.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.50	ND	ND
22-3	ND	15.30	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16.10	0.05	ND
22-4	ND	2.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.16	0.04	ND
22-5	ND	3.63	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.65	0.03	ND
22-6	ND	5.36	ND	ND	ND	ND	ND	ND	0.06	ND	ND	0.02	ND	ND	0.06	ND	ND	ND	0.06	ND	ND	ND	10.50	ND	ND
22-7	ND	9.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.20	0.05	ND
22-8	ND	6.77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.34	0.04	ND
22-9	ND	11.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.90	ND	ND
22-10	ND	9.53	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.80	0.04	ND
22-11	ND	11.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.20	ND	ND
22-12	ND	6.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.66	0.02	ND
22-13	ND	6.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.10	ND	ND
22-14	ND	14.80	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15.90	0.04	ND
22-15	ND	19.10	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	0.06	0.05	ND	ND	ND	0.03	ND	ND	ND	18.60	0.06	ND
22-16	ND	20.20	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	ND	ND	ND	20.70	0.07	ND
22-17	ND	7.87	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.50	0.04	ND
22-18	ND	14.90	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16.10	0.06	ND
22-19	ND	8.49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.60	ND	ND
22-20	ND	10.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.00	ND	ND
22-21	ND	15.80	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.30	0.05	ND
22-22	ND	4.97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.98	0.05	ND
22-23	ND	20.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.10	0.05	ND
22-24	ND	12.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.40	0.06	ND
22-25	ND	7.31	ND	ND	ND	ND	ND	ND	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.95	0.02	ND
22-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																								
Vial ID	**110**	**114**	**118**	**119**	**122**	**123**	**124**	**126**	**128**	**129**	**130**	**131**	**134**	**135**	**136**	**137**	**138/163**	**141**	**144**	**146**	**147**	**149**	**151**	**154**	**156**
22-1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	**0.04**	*ND*	**15.10**	*ND*
22-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	**0.03**	*ND*	**13.20**	*ND*
22-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	**0.04**	*ND*	**21.80**	*ND*
22-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.19**	*ND*	**0.04**	*ND*	**0.01**	*ND*	**10.90**	*ND*
22-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	**0.01**	*ND*	**12.00**	*ND*
22-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.13**	*ND*	**0.07**	*ND*	**0.03**	*ND*	**15.40**	*ND*
22-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	**0.02**	*ND*	**20.30**	*ND*
22-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	**0.04**	*ND*	**0.01**	*ND*	**13.60**	*ND*
22-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	**0.03**	*ND*	**19.90**	*ND*
22-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	**0.02**	*ND*	**16.90**	*ND*
22-11	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	**0.08**	*ND*	**0.02**	*ND*	**17.80**	*ND*
22-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	**0.02**	*ND*	**13.30**	*ND*
22-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	**0.06**	*ND*	**0.02**	*ND*	**17.50**	*ND*
22-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	**0.14**	*ND*	**0.11**	*ND*	**0.03**	*ND*	**24.90**	*ND*
22-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	**0.12**	*ND*	**0.14**	*ND*	**0.04**	*ND*	**29.60**	*ND*
22-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	**0.16**	*ND*	**0.13**	*ND*	**0.05**	*ND*	**31.60**	*ND*
22-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	**0.08**	*ND*	**0.03**	*ND*	**21.90**	*ND*
22-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	**0.04**	*ND*	**25.20**	*ND*
22-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.09**	*ND*	**0.07**	*ND*	**0.02**	*ND*	**18.70**	*ND*
22-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.07**	*ND*	**0.07**	*ND*	**0.03**	*ND*	**18.50**	*ND*
22-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	**0.10**	*ND*	**0.03**	*ND*	**25.40**	*ND*
22-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	**0.10**	*ND*	**0.06**	*ND*	**0.02**	*ND*	**18.10**	*ND*
22-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.09**	*ND*	**0.12**	*ND*	**0.04**	*ND*	**30.40**	*ND*
22-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	**0.12**	*ND*	**0.03**	*ND*	**28.40**	*ND*
22-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	**0.06**	*ND*	**0.05**	*ND*	**0.02**	*ND*	**12.40**	*ND*
22-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																								
	157	158	164	165	167	169	170	171	172	173	174	175	176	177	178	179	180	183	184	185	187	189	190	191	193
22-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND
22-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.11**	ND	ND	ND	ND
22-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.16**	ND	ND	ND	ND
22-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.09**	ND	ND	ND	ND
22-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND
22-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.12**	ND	ND	ND	ND
22-7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.16**	ND	ND	ND	ND
22-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND
22-9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.14**	ND	ND	ND	ND
22-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND
22-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND
22-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND
22-13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND
22-14	ND	**0.01**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.18**	ND	ND	ND	ND
22-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.02**	ND	ND	ND	**0.23**	ND	ND	ND	ND
22-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.02**	ND	ND	ND	**0.23**	ND	ND	ND	ND
22-17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.17**	ND	ND	ND	ND
22-18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.02**	ND	ND	ND	**0.19**	ND	ND	ND	ND
22-19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND
22-20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND
22-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.01**	ND	ND	ND	**0.18**	ND	ND	ND	ND
22-22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.15**	ND	ND	ND	ND
22-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.23**	ND	ND	ND	ND
22-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.20**	ND	ND	ND	ND
22-25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.08**	ND	ND	ND	ND
22-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)												
Vial ID	194	195	196	197	199	200	201	202	203	205	206	207	208
22-1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*
22-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-11	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.022**	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Internal Spike Standard Recovery (%)	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																					
Vial ID	**209**	**1**	**3**	**5**	**6**	**7**	**8**	**9**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28/31**
22-1	**67.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-2	**57.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-3	**78.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-4	**69.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-5	**91.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-6	**69.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-7	**97.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-8	**55.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-9	**95.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-10	**80.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-11	**88.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-12	**69.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-13	**92.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-14	**65.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-15	**85.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-16	**89.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-17	**62.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-18	**61.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-19	**54.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-20	**75.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-21	**60.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-22	**51.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-23	**71.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-24	**68.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-25	**29.4**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-26	**136.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																								
	29	32	33	34	35	37	40	41	42	44	45	46	47	48	49	51	52	53	54 [4]	56	59	60	63	64	66
22-1	**13.87**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-2	**15.81**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-3	**18.85**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-4	**1.32**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-5	**1.32**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-6	**2.79**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	**0.16**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-7	**4.55**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-8	**5.55**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-9	**9.94**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.07**	**0.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-10	**8.55**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-11	**9.49**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-12	**4.39**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-13	**1.73**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-14	**14.43**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	**0.06**	*ND*	*ND*	**0.13**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-15	**16.71**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	**0.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-16	**14.19**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*	*ND*	**0.08**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-17	**5.42**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-18	**15.53**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-19	**6.63**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-20	**8.21**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-21	**19.17**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-22	**1.83**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-23	**23.38**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-24	**8.46**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	**0.03**	**0.07**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-25	**16.87**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																								
	67/100	69	70	71	73	74	75 [4]	77	81/117	82	83	84	85	87/115	90/101	91	92	93	95	97	99	103	104	105/132/153 [4]	107
22-1	ND	14.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17.93	0.06	ND
22-2	ND	15.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	21.93	ND	ND
22-3	ND	19.62	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.64	0.06	ND
22-4	ND	3.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.86	0.06	ND
22-5	ND	3.97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.36	0.03	ND
22-6	ND	7.71	ND	ND	ND	ND	ND	ND	0.09	ND	ND	0.02	ND	ND	0.08	ND	ND	ND	0.08	ND	ND	ND	15.11	ND	ND
22-7	ND	9.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.54	0.05	ND
22-8	ND	12.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16.83	0.08	ND
22-9	ND	12.53	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.58	ND	ND
22-10	ND	11.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.50	0.05	ND
22-11	ND	13.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.86	ND	ND
22-12	ND	9.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.10	0.03	ND
22-13	ND	6.58	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.00	ND	ND
22-14	ND	22.77	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24.46	0.06	ND
22-15	ND	22.47	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	0.07	0.06	ND	ND	ND	0.04	ND	ND	ND	21.88	0.08	ND
22-16	ND	22.57	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	ND	ND	ND	23.13	0.08	ND
22-17	ND	12.69	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.16	0.07	ND
22-18	ND	24.23	ND	ND	ND	ND	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26.18	0.09	ND
22-19	ND	15.72	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19.63	ND	ND
22-20	ND	13.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15.89	ND	ND
22-21	ND	26.33	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	28.83	0.09	ND
22-22	ND	9.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.91	0.10	ND
22-23	ND	29.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	28.31	0.07	ND
22-24	ND	18.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	25.59	0.09	ND
22-25	ND	24.86	ND	ND	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.44	0.08	ND
22-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																								
	110	**114**	**118**	**119**	**122**	**123**	**124**	**126**	**128**	**129**	**130**	**131**	**134**	**135**	**136**	**137**	**138/163**	**141**	**144**	**146 [4]**	**147**	**149 [4]**	**151**	**154**	**156**
22-1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	**0.05**	*ND*	**22.37**	*ND*
22-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.09**	*ND*	**0.05**	*ND*	**23.16**	*ND*
22-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	**0.05**	*ND*	**27.95**	*ND*
22-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.28**	*ND*	**0.06**	*ND*	**0.01**	*ND*	**15.68**	*ND*
22-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	**0.02**	*ND*	**13.11**	*ND*
22-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.19**	*ND*	**0.09**	*ND*	**0.05**	*ND*	**22.16**	*ND*
22-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	**0.02**	*ND*	**20.82**	*ND*
22-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	**0.08**	*ND*	**0.02**	*ND*	**24.50**	*ND*
22-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	**0.03**	*ND*	**20.95**	*ND*
22-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.10**	*ND*	**0.03**	*ND*	**21.13**	*ND*
22-11	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.14**	*ND*	**0.09**	*ND*	**0.03**	*ND*	**20.23**	*ND*
22-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	**0.03**	*ND*	**19.28**	*ND*
22-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	**0.07**	*ND*	**0.02**	*ND*	**18.92**	*ND*
22-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	**0.21**	*ND*	**0.17**	*ND*	**0.05**	*ND*	**38.31**	*ND*
22-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.07**	**0.14**	*ND*	**0.16**	*ND*	**0.05**	*ND*	**34.82**	*ND*
22-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	**0.18**	*ND*	**0.14**	*ND*	**0.05**	*ND*	**35.31**	*ND*
22-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.17**	*ND*	**0.14**	*ND*	**0.04**	*ND*	**35.32**	*ND*
22-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.18**	*ND*	**0.06**	*ND*	**40.98**	*ND*
22-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.16**	*ND*	**0.13**	*ND*	**0.04**	*ND*	**34.63**	*ND*
22-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.09**	*ND*	**0.09**	*ND*	**0.04**	*ND*	**24.50**	*ND*
22-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.24**	*ND*	**0.16**	*ND*	**0.05**	*ND*	**42.33**	*ND*
22-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.07**	**0.20**	*ND*	**0.12**	*ND*	**0.05**	*ND*	**35.15**	*ND*
22-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.13**	*ND*	**0.17**	*ND*	**0.05**	*ND*	**42.82**	*ND*
22-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	**0.18**	*ND*	**0.05**	*ND*	**41.76**	*ND*
22-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	**0.19**	*ND*	**0.16**	*ND*	**0.06**	*ND*	**42.18**	*ND*
22-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																			
Vial ID	**157**	**158**	**164**	**165**	**167**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**184**	**185**
22-1	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-11	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-14	*ND*	**0.02**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*
22-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*
22-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*	*ND*
22-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*	*ND*
22-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.

SPAWAR Systems Center Pacific

San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																	
	187 [4]	189	190	191	193	194	195	196	197	199	200	201	202	203	205	206 [4]	207	208
22-1	**0.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-2	**0.19**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-3	**0.21**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*
22-4	**0.13**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-5	**0.11**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*
22-6	**0.18**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-7	**0.16**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-8	**0.18**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-9	**0.15**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*
22-10	**0.17**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-11	**0.15**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-12	**0.15**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-13	**0.14**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*
22-14	**0.28**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-15	**0.27**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.01**	*ND*	*ND*
22-16	**0.26**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-17	**0.27**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-18	**0.30**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-19	**0.25**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-20	**0.17**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-21	**0.31**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-22	**0.28**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-23	**0.32**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-24	**0.30**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-25	**0.28**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
22-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*

Notes:

1 Results from analysis by Engineer Research and Development Center (ERDC) were provided on 11/05/13. Total mass of the PCB congener is given per fibers in each sample.

2 Masses of PCB congeners extracted from the fibers are corrected for the percent recovery of the internal recovery standard using the following equation:

$$\text{Corrected PCB Mass} = \frac{\text{Uncorrected PCB Mass}}{(\text{Internal Spike Standard} \div 100\%)}$$

3 Reporting limit is 0.1 ng (uncorrected PCB congener mass per fiber).

4 It should be noted that PCB congeners 54, 75, 105/132/153, 146, 149, 187 and 206 were detected in trip blanks. Trip blanks were spiked with four PRCs (PCBs-29, 69, 104, and154) which did not include these congeners. Detection of these congeners is likely spurious and due to either an analytical artifact or contamination in the process. Concentrations of these congeners have not been included in these calculations.

5 Abbreviations:

NC = not calculated ng = nanogram PRC = performance reference compound

ND = not detected PCB = polychlorobiphenyl SPME = solid phase microextraction

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Sample ID	SPME Fiber Length Processed [1] (cm)	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)												
			1	3	5	6	7	8	9	12	13	14	15	16	17
22-1	Trip Blank 3	212.7	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-2	Trip Blank 2	200.3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-3	Trip Blank 1	198.3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-4	B22-8-MM-SR	199.1	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-5	B22-7-MM-SR	199.5	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-6	B22-6-MM-SR	197.5	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-7	B22-5-MM-SR	198.9	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-8	B22-4-MM-SR	199.2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-9	B22-2-MM-SR	199.1	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-10	B22-3-MM-SR	200.3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-11	B22-1R-MM-SR	195.7	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-12	B22-1-MM-SR	198.8	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-13	B22-9-MM-SR	179.8	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
22-14	B22-1R-MM-Core	393.9	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-15	B22-3-MM-Core	398.0	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-16	B22-10-MM-Core	370.9	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-17	B22-8-MM-Core	393.7	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-18	B22-4-MM-Core	384.9	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-19	B22-6-MM-Core	382.8	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-20	B22-1-MM-Core	229.8	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*
22-21	B22-9-DUP-MM-Core	391.4	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-22	B22-5-MM-Core	392.7	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-23	B22-2-MM-Core	394.0	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-24	B22-7-MM-Core	397.1	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-25	B22-9-MM-Core	398.8	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)															
	18	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28/31**	**29**	**32**	**33**	**34**	**35**	**37**	**40**
22-1	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.94**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.14**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.38**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-4	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.10**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-5	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.10**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-6	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.20**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-7	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.33**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-8	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.40**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-9	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.72**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-10	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.62**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-11	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.70**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-12	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.32**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-13	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	**0.14**	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
22-14	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.53**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-15	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.61**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-16	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.55**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-17	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.20**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-18	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.58**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-19	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.25**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-20	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	**0.52**	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*
22-21	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.71**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-22	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.07**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-23	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.86**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-24	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.31**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-25	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.61**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																
	41	42	44	45	46	47	48	49	51	52	53	54 [3]	56	59	60	63	64
22-1	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-2	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-3	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-4	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-5	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-6	< 0.007	< 0.007	**0.007**	< 0.007	< 0.007	< 0.007	< 0.007	**0.003**	< 0.007	**0.011**	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-7	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.004**	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-8	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-9	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.005**	**0.005**	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-10	< 0.007	< 0.007	**0.002**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-11	< 0.007	< 0.007	**0.002**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-12	< 0.007	< 0.007	**0.002**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-13	< 0.008	< 0.008	**0.002**	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	NC	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
22-14	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.001**	**0.002**	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-15	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.002**	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-16	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	< 0.004	**0.000**	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-17	< 0.004	< 0.004	**0.002**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-18	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-19	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.002**	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-20	< 0.006	< 0.006	**0.002**	< 0.006	< 0.006	< 0.006	< 0.006	**0.007**	< 0.006	< 0.006	< 0.006	NC	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
22-21	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.004**	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-22	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.001**	**0.001**	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-23	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.005**	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-24	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	< 0.004	**0.001**	**0.002**	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-25	< 0.004	< 0.004	**0.004**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] (ng PCB/µL PDMS)																
	66	67/100	69	70	71	73	74	75 [3]	77	81/117	82	83	84	85	87/115	90/101	91
22-1	< 0.007	< 0.007	**0.968**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-2	< 0.007	< 0.007	**1.127**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-3	< 0.007	< 0.007	**1.432**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-4	< 0.007	< 0.007	**0.268**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-5	< 0.007	< 0.007	**0.288**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-6	< 0.007	< 0.007	**0.565**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	**0.007**	< 0.007	< 0.007	**0.002**	< 0.007	< 0.007	**0.006**	< 0.007
22-7	< 0.007	< 0.007	**0.683**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-8	< 0.007	< 0.007	**0.886**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-9	< 0.007	< 0.007	**0.911**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-10	< 0.007	< 0.007	**0.861**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-11	< 0.007	< 0.007	**0.975**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-12	< 0.007	< 0.007	**0.661**	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-13	< 0.008	< 0.008	**0.530**	< 0.008	< 0.008	< 0.008	< 0.008	NC	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
22-14	< 0.004	< 0.004	**0.837**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-15	< 0.004	< 0.004	**0.817**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.002**	**0.002**	< 0.004
22-16	< 0.004	< 0.004	**0.881**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-17	< 0.004	< 0.004	**0.467**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-18	< 0.004	< 0.004	**0.911**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-19	< 0.004	< 0.004	**0.595**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-20	< 0.006	< 0.006	**0.843**	< 0.006	< 0.006	< 0.006	< 0.006	NC	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
22-21	< 0.004	< 0.004	**0.974**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-22	< 0.004	< 0.004	**0.356**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-23	< 0.004	< 0.004	**1.071**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-24	< 0.004	< 0.004	**0.681**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-25	< 0.004	< 0.004	**0.903**	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	**0.006**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)												
Vial ID	**92**	**93**	**95**	**97**	**99**	**103**	**104**	**105/132/153 [3]**	**107**	**110**	**114**	**118**	**119**
22-1	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.22**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.58**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.51**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-4	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.64**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-5	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.61**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-6	*< 0.007*	*< 0.007*	**0.006**	*< 0.007*	*< 0.007*	*< 0.007*	**1.11**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-7	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.99**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-8	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.22**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-9	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.99**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-10	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.98**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-11	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.03**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-12	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**0.81**	*NC*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
22-13	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	**0.97**	*NC*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
22-14	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.90**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-15	*< 0.004*	*< 0.004*	**0.001**	*< 0.004*	*< 0.004*	*< 0.004*	**0.80**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-16	*< 0.004*	*< 0.004*	**0.001**	*< 0.004*	*< 0.004*	*< 0.004*	**0.90**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-17	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.74**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-18	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.98**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-19	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.74**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-20	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	**1.00**	*NC*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*
22-21	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.07**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-22	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.07**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-23	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.04**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-24	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.93**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
22-25	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.11**	*NC*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)															
	122	123	124	126	128	129	130	131	134	135	136	137	138/163	141	144	146 [3]
22-1	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
22-2	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
22-3	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
22-4	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.020**	< 0.007	NC
22-5	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
22-6	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.014**	< 0.007	NC
22-7	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
22-8	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.008**	< 0.007	NC
22-9	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
22-10	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
22-11	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.010**	< 0.007	NC
22-12	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
22-13	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	**0.009**	< 0.008	NC
22-14	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.002**	**0.008**	< 0.004	NC
22-15	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.003**	**0.005**	< 0.004	NC
22-16	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.002**	**0.007**	< 0.004	NC
22-17	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.006**	< 0.004	NC
22-18	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
22-19	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.006**	< 0.004	NC
22-20	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	**0.006**	< 0.006	NC
22-21	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.009**	< 0.004	NC
22-22	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.003**	**0.007**	< 0.004	NC
22-23	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.005**	< 0.004	NC
22-24	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.005**	< 0.004	NC
22-25	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.003**	**0.007**	< 0.004	NC

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)														
Vial ID	147	149 [3]	151	154	156	157	158	164	165	167	169	170	171	172	173
22-1	< 0.007	NC	< 0.007	**1.52**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-2	< 0.007	NC	< 0.007	**1.67**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-3	< 0.007	NC	< 0.007	**2.04**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-4	< 0.007	NC	< 0.007	**1.14**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-5	< 0.007	NC	< 0.007	**0.95**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-6	< 0.007	NC	< 0.007	**1.62**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-7	< 0.007	NC	< 0.007	**1.52**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-8	< 0.007	NC	< 0.007	**1.78**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-9	< 0.007	NC	< 0.007	**1.52**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-10	< 0.007	NC	< 0.007	**1.53**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-11	< 0.007	NC	< 0.007	**1.50**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-12	< 0.007	NC	< 0.007	**1.40**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-13	< 0.008	NC	< 0.008	**1.52**	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
22-14	< 0.004	NC	< 0.004	**1.41**	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-15	< 0.004	NC	< 0.004	**1.27**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-16	< 0.004	NC	< 0.004	**1.38**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-17	< 0.004	NC	< 0.004	**1.30**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-18	< 0.004	NC	< 0.004	**1.54**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-19	< 0.004	NC	< 0.004	**1.31**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-20	< 0.006	NC	< 0.006	**1.54**	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
22-21	< 0.004	NC	< 0.004	**1.57**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-22	< 0.004	NC	< 0.004	**1.30**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-23	< 0.004	NC	< 0.004	**1.57**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-24	< 0.004	NC	< 0.004	**1.52**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-25	< 0.004	NC	< 0.004	**1.53**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																
	174	175	176	177	178	179	180	183	184	185	187 [3]	189	190	191	193	194	195
22-1	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-2	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-3	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-4	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-5	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-6	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-7	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-8	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-9	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-10	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-11	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-12	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
22-13	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	NC	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
22-14	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-15	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-16	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-17	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-18	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-19	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-20	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	NC	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
22-21	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.001**	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-22	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-23	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-24	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
22-25	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)										
	196	197	199	200	201	202	203	205	206 [3]	207	208
22-1	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-4	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-5	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-6	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-7	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-8	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-9	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-10	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-11	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-12	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	NC	*< 0.007*	*< 0.007*
22-13	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	NC	*< 0.008*	*< 0.008*
22-14	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-15	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-16	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-17	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-18	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-19	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-20	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	NC	*< 0.006*	*< 0.006*
22-21	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-22	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-23	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-24	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*
22-25	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	NC	*< 0.004*	*< 0.004*

Notes:

1 Values from **Table 1**

2 Concentrations of PCB Congeners are calculated as the corrected total mass of PCB congeners divided by the volume of SPME fiber, assuming 0.06908 µL / cm_{PDMS}.

3 Concentrations of PCB-53, 75, 105/132/153, 146, 149, 187 and 206 were excluded (see note in **Table 5**).

4 Abbreviations:

µL = microliter	ng = nanogram	SPME = solid phase microextraction
cm = centimeter	PCB = polychlorobiphenyl	
NC = not calculated	PDMS = polydimethylsiloxane	

Table 7. Correction Factors for Performance Reference Compounds and Derivation of Regression Models to Predict Correction Factors for other PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

		Concentration of PCB Performance Reference Compounds in PDMS (ng $_{PCB}$/µL $_{PDMS}$) (Table 6)				Initial Correction Factors by PCB Homolog [1, 2, 3]				Log_{10} Correction Factors Used for Regression				Regression Model for Log_{10} CF on K_{fs} [4]			Model-predicted CF ÷ Observed CF for PRCs					Percent of Steady State Reached [5]			
Vial ID	Sample ID	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	Slope	Y-intercept	r^2	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	Average	Tri	Tetra	Penta	Hexa
22-4	B22-8-MM-SR	0.10	0.27	0.64	1.14	1.08	1.26	1.71	2.59	0.03	0.10	0.23	0.41	9.91E-08	0.04	0.96	1.08	0.99	0.90	1.04	1.00	92%	79%	58%	39%
22-5	B22-7-MM-SR	0.10	0.29	0.61	0.95	1.08	1.29	1.65	2.05	0.03	0.11	0.22	0.31	6.91E-08	0.06	0.88	1.11	0.97	0.89	1.04	1.00	92%	78%	61%	49%
22-6	B22-6-MM-SR	0.20	0.57	1.11	1.62	1.19	1.79	3.53	7.98	0.08	0.25	0.55	0.90	2.12E-07	0.11	0.94	1.24	0.95	0.77	1.10	1.02	84%	56%	28%	13%
22-7	B22-5-MM-SR	0.33	0.68	0.99	1.52	1.36	2.14	2.76	5.44	0.13	0.33	0.44	0.74	1.46E-07	0.18	0.92	1.22	0.85	0.92	1.04	1.01	74%	47%	36%	18%
22-8	B22-4-MM-SR	0.40	0.89	1.22	1.78	1.47	3.25	4.79	24.37	0.17	0.51	0.68	1.39	3.04E-07	0.21	0.96	1.34	0.74	0.98	1.03	1.02	68%	31%	21%	4%
22-9	B22-2-MM-SR	0.72	0.91	0.99	1.52	2.35	3.47	2.77	5.56	0.37	0.54	0.44	0.75	8.62E-08	0.39	0.77	1.10	0.79	1.20	0.96	1.01	43%	29%	36%	18%
22-10	B22-3-MM-SR	0.62	0.86	0.98	1.53	1.96	3.06	2.71	5.62	0.29	0.49	0.43	0.75	1.07E-07	0.32	0.85	1.15	0.79	1.13	0.98	1.01	51%	33%	37%	18%
22-11	B22-1R-MM-SR	0.70	0.98	1.03	1.50	2.26	4.20	2.97	5.15	0.35	0.62	0.47	0.71	6.88E-08	0.43	0.51	1.25	0.70	1.16	0.98	1.02	44%	24%	34%	19%
22-12	B22-1-MM-SR	0.32	0.66	0.81	1.40	1.34	2.07	2.10	4.10	0.13	0.32	0.32	0.61	1.15E-07	0.16	0.90	1.17	0.82	1.04	1.00	1.01	75%	48%	48%	24%
22-13	B22-9-MM-SR	0.14	0.53	0.97	1.52	1.12	1.71	2.67	5.56	0.05	0.23	0.43	0.75	1.74E-07	0.09	0.94	1.22	0.90	0.85	1.07	1.01	89%	59%	38%	18%
22-14	B22-1R-MM-Core	0.53	0.84	0.90	1.41	1.73	2.89	2.39	4.13	0.24	0.46	0.38	0.62	8.04E-08	0.30	0.70	1.21	0.76	1.10	0.99	1.01	58%	35%	42%	24%
22-15	B22-3-MM-Core	0.61	0.82	0.80	1.27	1.93	2.77	2.06	3.15	0.29	0.44	0.31	0.50	4.14E-08	0.32	0.46	1.11	0.80	1.17	0.96	1.01	52%	36%	49%	32%
22-16	B22-10-MM-Core	0.55	0.88	0.90	1.38	1.79	3.21	2.40	3.88	0.25	0.51	0.38	0.59	6.46E-08	0.33	0.52	1.25	0.73	1.12	0.99	1.02	56%	31%	42%	26%
22-17	B22-8-MM-Core	0.20	0.47	0.74	1.30	1.19	1.57	1.92	3.33	0.07	0.20	0.28	0.52	1.12E-07	0.09	0.96	1.12	0.91	0.95	1.02	1.00	84%	64%	52%	30%
22-18	B22-4-MM-Core	0.58	0.91	0.98	1.54	1.87	3.47	2.75	5.88	0.27	0.54	0.44	0.77	1.09E-07	0.33	0.74	1.24	0.72	1.15	0.98	1.02	54%	29%	36%	17%
22-19	B22-6-MM-Core	0.25	0.59	0.74	1.31	1.25	1.87	1.92	3.39	0.10	0.27	0.28	0.53	1.02E-07	0.13	0.89	1.17	0.84	1.01	1.01	1.01	80%	54%	52%	29%
22-20	B22-1-MM-Core	0.52	0.84	1.00	1.54	1.70	2.93	2.84	5.93	0.23	0.47	0.45	0.77	1.25E-07	0.28	0.86	1.23	0.77	1.05	1.00	1.01	59%	34%	35%	17%
22-21	B22-9-DUP-MM-Core	0.71	0.97	1.07	1.57	2.29	4.19	3.22	6.38	0.36	0.62	0.51	0.80	9.45E-08	0.42	0.69	1.24	0.72	1.15	0.98	1.02	44%	24%	31%	16%
22-22	B22-5-MM-Core	0.07	0.36	0.07	1.30	1.06	1.39	1.05	3.31	0.02	0.14	0.02	0.52	1.28E-07	-0.03	0.80	0.97	0.81	1.41	0.91	1.02	95%	72%	95%	30%
22-23	B22-2-MM-Core	0.86	1.07	1.04	1.57	3.15	6.14	3.06	6.54	0.50	0.79	0.49	0.82	5.57E-08	0.56	0.26	1.19	0.63	1.44	0.92	1.05	32%	16%	33%	15%
22-24	B22-7-MM-Core	0.31	0.68	0.93	1.52	1.32	2.14	2.52	5.55	0.12	0.33	0.40	0.74	1.51E-07	0.16	0.93	1.21	0.83	0.98	1.02	1.01	76%	47%	40%	18%
22-25	B22-9-MM-Core	0.61	0.90	1.11	1.53	1.95	3.39	3.51	5.70	0.29	0.53	0.54	0.76	1.02E-07	0.37	0.79	1.28	0.79	0.95	1.04	1.02	51%	29%	29%	18%
Maximum [PRC in PDMS] for Core and SR Samples		0.86	1.07	1.22	1.78															Average		66%	43%	42%	22%
22-1	Trip Blank 3	0.94	0.97	1.22	1.52															Standard Deviation		19%	18%	15%	10%
22-2	Trip Blank 2	1.14	1.13	1.58	1.67																				
22-3	Trip Blank 1	1.38	1.43	1.51	2.04																				
Average Trip Blanks [2]		1.26	1.28	1.55	1.86																				

Notes:

1
$$CF = \frac{1}{\left(\frac{[PDMS_{t=0}]-[PDMS_{t=14}]}{[PDMS_{t=0}]}\right)}$$

2 $[PDMS]_{t=0}$ is the average concentration of PRCs in the trip blanks 1 and 2. Trip Blank 3 was not used in the average because of questionable and unacceptable analytical results, which included values that are less than the maximum values for SPMEs exposed to sediment. Hypothetically, concentrations of PRCs in blanks should be greater than all site-deployed samples.

3 $[PDMS]_{t=14}$ is the concentration of the PRC after 14 days in the sediment.

4 A linear regression model was developed from the observed relationship between Log_{10} of the Correction Factor and the fiber: water partition coefficient (K_{fs}, Table 4) for the four PRCs. Cells highlighted in red indicate a relationship that is not strong (r^2<0.8).

5 Calculated by Observed CF^{-1}

6 Abbreviations:

CF = correction factor — PCB = polychlorobiphenyl
µL = microliter — PDMS = polydimethylsiloxane
ng = nanogram — PRC = performance reference compound

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
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Vial ID				Model-predicted Correction Factors [3]									
Congener		Regression Model [2]		1	3	5	6	7	8	9	12	13	14
Homolog				Mono	Mono	Di	Di	Di	Di	Di	Di	Di	Di
K_{fs} (L/L_{PDMS}) [1]	Sample ID	Slope	Y-intercept	16,388	71,536	88,009	88,009	88,009	88,009	88,009	183,877	183,877	183,877
22-4	B22-8-MM-SR	9.91E-08	0.04	1.1	1.11	1.12	1.12	1.12	1.12	1.12	1.14	1.14	1.14
22-5	B22-7-MM-SR	6.91E-08	0.06	1.15	1.16	1.16	1.16	1.16	1.16	1.16	1.18	1.18	1.18
22-6	B22-6-MM-SR	2.12E-07	0.11	1.3	1.33	1.34	1.34	1.34	1.34	1.34	1.41	1.41	1.41
22-7	B22-5-MM-SR	1.46E-07	0.18	1.52	1.54	1.55	1.55	1.55	1.55	1.55	1.6	1.6	1.6
22-8	B22-4-MM-SR	3.04E-07	0.21	1.62	1.69	1.71	1.71	1.71	1.71	1.71	1.83	1.83	1.83
22-9	B22-2-MM-SR	8.62E-08	0.39	2.45	2.48	2.49	2.49	2.49	2.49	2.49	2.53	2.53	2.53
22-10	B22-3-MM-SR	1.07E-07	0.32	2.11	2.13	2.14	2.14	2.14	2.14	2.14	2.19	2.19	2.19
22-11	B22-1R-MM-SR	6.88E-08	0.43	2.71	2.73	2.74	2.74	2.74	2.74	2.74	2.78	2.78	2.78
22-12	B22-1-MM-SR	1.15E-07	0.16	1.46	1.48	1.49	1.49	1.49	1.49	1.49	1.53	1.53	1.53
22-13	B22-9-MM-SR	1.74E-07	0.09	1.23	1.26	1.27	1.27	1.27	1.27	1.27	1.32	1.32	1.32
22-14	B22-1R-MM-Core	8.04E-08	0.30	1.98	2	2.01	2.01	2.01	2.01	2.01	2.05	2.05	2.05
22-15	B22-3-MM-Core	4.14E-08	0.32	2.09	2.1	2.1	2.1	2.1	2.1	2.1	2.12	2.12	2.12
22-16	B22-10-MM-Core	6.46E-08	0.33	2.14	2.16	2.16	2.16	2.16	2.16	2.16	2.2	2.2	2.2
22-17	B22-8-MM-Core	1.12E-07	0.09	1.24	1.26	1.26	1.26	1.26	1.26	1.26	1.3	1.3	1.3
22-18	B22-4-MM-Core	1.09E-07	0.33	2.16	2.19	2.2	2.2	2.2	2.2	2.2	2.25	2.25	2.25
22-19	B22-6-MM-Core	1.02E-07	0.13	1.37	1.39	1.39	1.39	1.39	1.39	1.39	1.42	1.42	1.42
22-20	B22-1-MM-Core	1.25E-07	0.28	1.92	1.96	1.96	1.96	1.96	1.96	1.96	2.02	2.02	2.02
22-21	B22-9-DUP-MM-Core	9.45E-08	0.42	2.66	2.7	2.71	2.71	2.71	2.71	2.71	2.76	2.76	2.76
22-22	B22-5-MM-Core	1.28E-07	-0.03	1	1	1	1	1	1	1	1	1	1
22-23	B22-2-MM-Core	5.57E-08	0.56	3.63	3.65	3.66	3.66	3.66	3.66	3.66	3.71	3.71	3.71
22-24	B22-7-MM-Core	1.51E-07	0.16	1.45	1.48	1.49	1.49	1.49	1.49	1.49	1.54	1.54	1.54
22-25	B22-9-MM-Core	1.02E-07	0.37	2.34	2.37	2.38	2.38	2.38	2.38	2.38	2.44	2.44	2.44

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
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Vial ID	Model-predicted Correction Factors [3]											
Congener	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28/31**
Homolog	**Di**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**
K_{fs} (L/L_{PDMS}) [1]	**183,877**	**179,691**	**179,691**	**179,691**	**108,275**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**
22-4	1.14	1.14	1.14	1.14	1.12	1.17	1.17	1.14	1.17	1.17	1.14	1.17
22-5	1.18	1.18	1.18	1.18	1.17	1.2	1.2	1.18	1.2	1.2	1.18	1.2
22-6	1.41	1.4	1.4	1.4	1.36	1.48	1.48	1.4	1.48	1.48	1.4	1.48
22-7	1.6	1.6	1.6	1.6	1.56	1.66	1.66	1.6	1.66	1.66	1.6	1.66
22-8	1.83	1.82	1.82	1.82	1.73	1.97	1.97	1.82	1.97	1.97	1.82	1.97
22-9	2.53	2.53	2.53	2.53	2.5	2.59	2.59	2.53	2.59	2.59	2.53	2.59
22-10	2.19	2.19	2.19	2.19	2.15	2.25	2.25	2.19	2.25	2.25	2.19	2.25
22-11	2.78	2.78	2.78	2.78	2.75	2.83	2.83	2.78	2.83	2.83	2.78	2.83
22-12	1.53	1.52	1.52	1.52	1.5	1.57	1.57	1.52	1.57	1.57	1.52	1.57
22-13	1.32	1.31	1.31	1.31	1.28	1.37	1.37	1.31	1.37	1.37	1.31	1.37
22-14	2.05	2.04	2.04	2.04	2.02	2.09	2.09	2.04	2.09	2.09	2.04	2.09
22-15	2.12	2.12	2.12	2.12	2.11	2.15	2.15	2.12	2.15	2.15	2.12	2.15
22-16	2.2	2.19	2.19	2.19	2.17	2.23	2.23	2.19	2.23	2.23	2.19	2.23
22-17	1.3	1.3	1.3	1.3	1.27	1.33	1.33	1.3	1.33	1.33	1.3	1.33
22-18	2.25	2.25	2.25	2.25	2.21	2.32	2.32	2.25	2.32	2.32	2.25	2.32
22-19	1.42	1.42	1.42	1.42	1.4	1.46	1.46	1.42	1.46	1.46	1.42	1.46
22-20	2.02	2.02	2.02	2.02	1.98	2.08	2.08	2.02	2.08	2.08	2.02	2.08
22-21	2.76	2.76	2.76	2.76	2.72	2.83	2.83	2.76	2.83	2.83	2.76	2.83
22-22	1	1	1	1	1	1.03	1.03	1	1.03	1.03	1	1.03
22-23	3.71	3.7	3.7	3.7	3.67	3.76	3.76	3.7	3.76	3.76	3.7	3.76
22-24	1.54	1.54	1.54	1.54	1.5	1.6	1.6	1.54	1.6	1.6	1.54	1.6
22-25	2.44	2.43	2.43	2.43	2.39	2.5	2.5	2.43	2.5	2.5	2.43	2.5

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]											
Congener	32	33	34	35	37	40	41	42	44	45	46	47
Homolog	Tri	Tri	Tri	Tri	Tri	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra	Tetra
K_{fs} (L/L_{PDMS}) [1]	179,691	291,425	291,425	472,637	472,637	581,470	581,470	581,470	581,470	402,279	402,279	581,470
22-4	1.14	1.17	1.17	1.22	1.22	1.25	1.25	1.25	1.25	1.2	1.2	1.25
22-5	1.18	1.2	1.2	1.24	1.24	1.26	1.26	1.26	1.26	1.22	1.22	1.26
22-6	1.4	1.48	1.48	1.62	1.62	1.71	1.71	1.71	1.71	1.57	1.57	1.71
22-7	1.6	1.66	1.66	1.77	1.77	1.83	1.83	1.83	1.83	1.73	1.73	1.83
22-8	1.82	1.97	1.97	2.23	2.23	2.41	2.41	2.41	2.41	2.13	2.13	2.41
22-9	2.53	2.59	2.59	2.68	2.68	2.74	2.74	2.74	2.74	2.65	2.65	2.74
22-10	2.19	2.25	2.25	2.35	2.35	2.42	2.42	2.42	2.42	2.31	2.31	2.42
22-11	2.78	2.83	2.83	2.91	2.91	2.96	2.96	2.96	2.96	2.88	2.88	2.96
22-12	1.52	1.57	1.57	1.65	1.65	1.69	1.69	1.69	1.69	1.62	1.62	1.69
22-13	1.31	1.37	1.37	1.48	1.48	1.54	1.54	1.54	1.54	1.44	1.44	1.54
22-14	2.04	2.09	2.09	2.16	2.16	2.2	2.2	2.2	2.2	2.13	2.13	2.2
22-15	2.12	2.15	2.15	2.18	2.18	2.21	2.21	2.21	2.21	2.17	2.17	2.21
22-16	2.19	2.23	2.23	2.29	2.29	2.33	2.33	2.33	2.33	2.27	2.27	2.33
22-17	1.3	1.33	1.33	1.4	1.4	1.44	1.44	1.44	1.44	1.37	1.37	1.44
22-18	2.25	2.32	2.32	2.42	2.42	2.49	2.49	2.49	2.49	2.38	2.38	2.49
22-19	1.42	1.46	1.46	1.52	1.52	1.56	1.56	1.56	1.56	1.5	1.5	1.56
22-20	2.02	2.08	2.08	2.2	2.2	2.27	2.27	2.27	2.27	2.15	2.15	2.27
22-21	2.76	2.83	2.83	2.94	2.94	3.01	3.01	3.01	3.01	2.9	2.9	3.01
22-22	1	1.03	1.03	1.08	1.08	1.12	1.12	1.12	1.12	1.06	1.06	1.12
22-23	3.7	3.76	3.76	3.85	3.85	3.9	3.9	3.9	3.9	3.81	3.81	3.9
22-24	1.54	1.6	1.6	1.7	1.7	1.77	1.77	1.77	1.77	1.66	1.66	1.77
22-25	2.43	2.5	2.5	2.61	2.61	2.68	2.68	2.68	2.68	2.57	2.57	2.68

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
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Vial ID	Model-predicted Correction Factors [3]											
Congener	**48**	**49**	**51**	**52**	**53**	**54 [4]**	**56**	**59**	**60**	**63**	**64**	**66**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**581,470**	**581,470**	**402,279**	**581,470**	**402,279**	**441,090**	**840,480**	**581,470**	**840,480**	**840,480**	**581,470**	**840,480**
22-4	1.25	1.25	1.2	1.25	1.2	NC	1.33	1.25	1.33	1.33	1.25	1.33
22-5	1.26	1.26	1.22	1.26	1.22	NC	1.31	1.26	1.31	1.31	1.26	1.31
22-6	1.71	1.71	1.57	1.71	1.57	NC	1.94	1.71	1.94	1.94	1.71	1.94
22-7	1.83	1.83	1.73	1.83	1.73	NC	2	1.83	2	2	1.83	2
22-8	2.41	2.41	2.13	2.41	2.13	NC	2.89	2.41	2.89	2.89	2.41	2.89
22-9	2.74	2.74	2.65	2.74	2.65	NC	2.89	2.74	2.89	2.89	2.74	2.89
22-10	2.42	2.42	2.31	2.42	2.31	NC	2.58	2.42	2.58	2.58	2.42	2.58
22-11	2.96	2.96	2.88	2.96	2.88	NC	3.09	2.96	3.09	3.09	2.96	3.09
22-12	1.69	1.69	1.62	1.69	1.62	NC	1.81	1.69	1.81	1.81	1.69	1.81
22-13	1.54	1.54	1.44	1.54	1.44	NC	1.71	1.54	1.71	1.71	1.54	1.71
22-14	2.2	2.2	2.13	2.2	2.13	NC	2.31	2.2	2.31	2.31	2.2	2.31
22-15	2.21	2.21	2.17	2.21	2.17	NC	2.26	2.21	2.26	2.26	2.21	2.26
22-16	2.33	2.33	2.27	2.33	2.27	NC	2.42	2.33	2.42	2.42	2.33	2.42
22-17	1.44	1.44	1.37	1.44	1.37	NC	1.54	1.44	1.54	1.54	1.44	1.54
22-18	2.49	2.49	2.38	2.49	2.38	NC	2.66	2.49	2.66	2.66	2.49	2.66
22-19	1.56	1.56	1.5	1.56	1.5	NC	1.66	1.56	1.66	1.66	1.56	1.66
22-20	2.27	2.27	2.15	2.27	2.15	NC	2.44	2.27	2.44	2.44	2.27	2.44
22-21	3.01	3.01	2.9	3.01	2.9	NC	3.19	3.01	3.19	3.19	3.01	3.19
22-22	1.12	1.12	1.06	1.12	1.06	NC	1.21	1.12	1.21	1.21	1.12	1.21
22-23	3.9	3.9	3.81	3.9	3.81	NC	4.03	3.9	4.03	4.03	3.9	4.03
22-24	1.77	1.77	1.66	1.77	1.66	NC	1.94	1.77	1.94	1.94	1.77	1.94
22-25	2.68	2.68	2.57	2.68	2.57	NC	2.84	2.68	2.84	2.84	2.68	2.84

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]												
Congener	**67/100 [6]**	**70**	**71**	**73**	**74**	**75 [4]**	**77**	**81/117 [6]**	**82**	**83**	**84**	**85**	**87/115**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**840,480**	**840,480**	**581,470**	**581,470**	**840,480**	**581,470**	**1,214,863**	**1,214,863**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,756,011**
22-4	1.33	1.33	1.25	1.25	1.33	NC	1.44	1.44	1.63	1.63	1.47	1.63	1.63
22-5	1.31	1.31	1.26	1.26	1.31	NC	1.39	1.39	1.51	1.51	1.41	1.51	1.51
22-6	1.94	1.94	1.71	1.71	1.94	NC	2.33	2.33	3.03	3.03	2.43	3.03	3.03
22-7	2	2	1.83	1.83	2	NC	2.27	2.27	2.72	2.72	2.34	2.72	2.72
22-8	2.89	2.89	2.41	2.41	2.89	NC	3.76	3.76	5.49	5.49	3.99	5.49	5.49
22-9	2.89	2.89	2.74	2.74	2.89	NC	3.11	3.11	3.46	3.46	3.16	3.46	3.46
22-10	2.58	2.58	2.42	2.42	2.58	NC	2.83	2.83	3.23	3.23	2.89	3.23	3.23
22-11	3.09	3.09	2.96	2.96	3.09	NC	3.27	3.27	3.57	3.57	3.32	3.57	3.57
22-12	1.81	1.81	1.69	1.69	1.81	NC	2	2	2.31	2.31	2.05	2.31	2.31
22-13	1.71	1.71	1.54	1.54	1.71	NC	1.99	1.99	2.48	2.48	2.06	2.48	2.48
22-14	2.31	2.31	2.2	2.2	2.31	NC	2.48	2.48	2.74	2.74	2.52	2.74	2.74
22-15	2.26	2.26	2.21	2.21	2.26	NC	2.34	2.34	2.47	2.47	2.36	2.47	2.47
22-16	2.42	2.42	2.33	2.33	2.42	NC	2.56	2.56	2.77	2.77	2.59	2.77	2.77
22-17	1.54	1.54	1.44	1.44	1.54	NC	1.69	1.69	1.94	1.94	1.73	1.94	1.94
22-18	2.66	2.66	2.49	2.49	2.66	NC	2.92	2.92	3.34	3.34	2.98	3.34	3.34
22-19	1.66	1.66	1.56	1.56	1.66	NC	1.81	1.81	2.06	2.06	1.85	2.06	2.06
22-20	2.44	2.44	2.27	2.27	2.44	NC	2.72	2.72	3.18	3.18	2.79	3.18	3.18
22-21	3.19	3.19	3.01	3.01	3.19	NC	3.46	3.46	3.89	3.89	3.52	3.89	3.89
22-22	1.21	1.21	1.12	1.12	1.21	NC	1.35	1.35	1.58	1.58	1.38	1.58	1.58
22-23	4.03	4.03	3.9	3.9	4.03	NC	4.23	4.23	4.53	4.53	4.28	4.53	4.53
22-24	1.94	1.94	1.77	1.77	1.94	NC	2.21	2.21	2.66	2.66	2.27	2.66	2.66
22-25	2.84	2.84	2.68	2.68	2.84	NC	3.11	3.11	3.53	3.53	3.17	3.53	3.53

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]												
Congener	**90/101**	**91**	**92**	**93**	**95**	**97**	**99**	**103**	**105/132/153 [4,6]**	**107**	**110**	**114**	**118**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**1,301,749**	**1,756,011**	**1,756,011**	**1,301,749**	**2,368,794**	**2,368,794**	**1,756,011**	**2,368,794**	**2,368,794**
22-4	1.63	1.47	1.63	1.47	1.47	1.63	1.63	1.47	NC	1.88	1.63	1.88	1.88
22-5	1.51	1.41	1.51	1.41	1.41	1.51	1.51	1.41	NC	1.67	1.51	1.67	1.67
22-6	3.03	2.43	3.03	2.43	2.43	3.03	3.03	2.43	NC	4.08	3.03	4.08	4.08
22-7	2.72	2.34	2.72	2.34	2.34	2.72	2.72	2.34	NC	3.35	2.72	3.35	3.35
22-8	5.49	3.99	5.49	3.99	3.99	5.49	5.49	3.99	NC	8.42	5.49	8.42	8.42
22-9	3.46	3.16	3.46	3.16	3.16	3.46	3.46	3.16	NC	3.91	3.46	3.91	3.91
22-10	3.23	2.89	3.23	2.89	2.89	3.23	3.23	2.89	NC	3.75	3.23	3.75	3.75
22-11	3.57	3.32	3.57	3.32	3.32	3.57	3.57	3.32	NC	3.93	3.57	3.93	3.93
22-12	2.31	2.05	2.31	2.05	2.05	2.31	2.31	2.05	NC	2.72	2.31	2.72	2.72
22-13	2.48	2.06	2.48	2.06	2.06	2.48	2.48	2.06	NC	3.17	2.48	3.17	3.17
22-14	2.74	2.52	2.74	2.52	2.52	2.74	2.74	2.52	NC	3.06	2.74	3.06	3.06
22-15	2.47	2.36	2.47	2.36	2.36	2.47	2.47	2.36	NC	2.62	2.47	2.62	2.62
22-16	2.77	2.59	2.77	2.59	2.59	2.77	2.77	2.59	NC	3.04	2.77	3.04	3.04
22-17	1.94	1.73	1.94	1.73	1.73	1.94	1.94	1.73	NC	2.28	1.94	2.28	2.28
22-18	3.34	2.98	3.34	2.98	2.98	3.34	3.34	2.98	NC	3.9	3.34	3.9	3.9
22-19	2.06	1.85	2.06	1.85	1.85	2.06	2.06	1.85	NC	2.37	2.06	2.37	2.37
22-20	3.18	2.79	3.18	2.79	2.79	3.18	3.18	2.79	NC	3.79	3.18	3.79	3.79
22-21	3.89	3.52	3.89	3.52	3.52	3.89	3.89	3.52	NC	4.44	3.89	4.44	4.44
22-22	1.58	1.38	1.58	1.38	1.38	1.58	1.58	1.38	NC	1.89	1.58	1.89	1.89
22-23	4.53	4.28	4.53	4.28	4.28	4.53	4.53	4.28	NC	4.9	4.53	4.9	4.9
22-24	2.66	2.27	2.66	2.27	2.27	2.66	2.66	2.27	NC	3.3	2.66	3.3	3.3
22-25	3.53	3.17	3.53	3.17	3.17	3.53	3.53	3.17	NC	4.08	3.53	4.08	4.08

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]												
Congener	**119**	**122**	**123**	**124**	**126**	**128**	**129**	**130**	**131**	**134**	**135**	**136**	**137**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**2,368,794**	**2,368,794**	**2,368,794**	**3,195,415**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**4,836,457**	**4,949,112**
22-4	1.63	1.88	1.88	1.88	2.27	3.39	3.39	3.39	2.68	2.68	2.68	3.3	3.39
22-5	1.51	1.67	1.67	1.67	1.9	2.52	2.52	2.52	2.14	2.14	2.14	2.47	2.52
22-6	3.03	4.08	4.08	4.08	6.11	14.4	14.4	14.4	8.75	8.75	8.75	13.6	14.4
22-7	2.72	3.35	3.35	3.35	4.43	7.99	7.99	7.99	5.67	5.67	5.67	7.7	7.99
22-8	5.49	8.42	8.42	8.42	15	51.3	51.3	51.3	25.1	25.1	25.1	47.4	51.3
22-9	3.46	3.91	3.91	3.91	4.61	6.52	6.52	6.52	5.33	5.33	5.33	6.38	6.52
22-10	3.23	3.75	3.75	3.75	4.59	7.06	7.06	7.06	5.5	5.5	5.5	6.87	7.06
22-11	3.57	3.93	3.93	3.93	4.48	5.92	5.92	5.92	5.03	5.03	5.03	5.81	5.92
22-12	2.31	2.72	2.72	2.72	3.38	5.38	5.38	5.38	4.11	4.11	4.11	5.22	5.38
22-13	2.48	3.17	3.17	3.17	4.41	8.93	8.93	8.93	5.93	5.93	5.93	8.53	8.93
22-14	2.74	3.06	3.06	3.06	3.57	4.94	4.94	4.94	4.09	4.09	4.09	4.84	4.94
22-15	2.47	2.62	2.62	2.62	2.83	3.34	3.34	3.34	3.04	3.04	3.04	3.31	3.34
22-16	2.77	3.04	3.04	3.04	3.44	4.46	4.46	4.46	3.83	3.83	3.83	4.38	4.46
22-17	1.94	2.28	2.28	2.28	2.82	4.43	4.43	4.43	3.4	3.4	3.4	4.3	4.43
22-18	3.34	3.9	3.9	3.9	4.79	7.44	7.44	7.44	5.76	5.76	5.76	7.23	7.44
22-19	2.06	2.37	2.37	2.37	2.88	4.35	4.35	4.35	3.43	3.43	3.43	4.23	4.35
22-20	3.18	3.79	3.79	3.79	4.81	7.98	7.98	7.98	5.95	5.95	5.95	7.72	7.98
22-21	3.89	4.44	4.44	4.44	5.32	7.79	7.79	7.79	6.24	6.24	6.24	7.6	7.79
22-22	1.58	1.89	1.89	1.89	2.41	4.04	4.04	4.04	2.99	2.99	2.99	3.91	4.04
22-23	4.53	4.9	4.9	4.9	5.45	6.83	6.83	6.83	5.99	5.99	5.99	6.73	6.83
22-24	2.66	3.3	3.3	3.3	4.4	8.1	8.1	8.1	5.68	5.68	5.68	7.79	8.1
22-25	3.53	4.08	4.08	4.08	4.96	7.5	7.5	7.5	5.9	5.9	5.9	7.3	7.5

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]												
Congener	**138/163**	**141**	**144**	**146 [4]**	**147**	**149 [4]**	**151**	**156**	**157**	**158**	**164**	**165**	**167**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**4,949,112**	**4,949,112**	**3,931,220**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**6,375,692**	**6,375,692**	**4,949,112**	**4,949,112**	**4,949,112**	**6,375,692**
22-4	3.39	3.39	2.68	NC	2.68	NC	2.68	4.69	4.69	3.39	3.39	3.39	4.69
22-5	2.52	2.52	2.14	NC	2.14	NC	2.14	3.16	3.16	2.52	2.52	2.52	3.16
22-6	14.4	14.4	8.75	NC	8.75	NC	8.75	28.8	28.8	14.4	14.4	14.4	28.8
22-7	7.99	7.99	5.67	NC	5.67	NC	5.67	12.9	12.9	7.99	7.99	7.99	12.9
22-8	51.3	51.3	25.1	NC	25.1	NC	25.1	> 100	> 100	51.3	51.3	51.3	> 100
22-9	6.52	6.52	5.33	NC	5.33	NC	5.33	8.66	8.66	6.52	6.52	6.52	8.66
22-10	7.06	7.06	5.5	NC	5.5	NC	5.5	10	10	7.06	7.06	7.06	10
22-11	5.92	5.92	5.03	NC	5.03	NC	5.03	7.41	7.41	5.92	5.92	5.92	7.41
22-12	5.38	5.38	4.11	NC	4.11	NC	4.11	7.84	7.84	5.38	5.38	5.38	7.84
22-13	8.93	8.93	5.93	NC	5.93	NC	5.93	15.8	15.8	8.93	8.93	8.93	15.8
22-14	4.94	4.94	4.09	NC	4.09	NC	4.09	6.43	6.43	4.94	4.94	4.94	6.43
22-15	3.34	3.34	3.04	NC	3.04	NC	3.04	3.83	3.83	3.34	3.34	3.34	3.83
22-16	4.46	4.46	3.83	NC	3.83	NC	3.83	5.51	5.51	4.46	4.46	4.46	5.51
22-17	4.43	4.43	3.4	NC	3.4	NC	3.4	6.39	6.39	4.43	4.43	4.43	6.39
22-18	7.44	7.44	5.76	NC	5.76	NC	5.76	10.6	10.6	7.44	7.44	7.44	10.6
22-19	4.35	4.35	3.43	NC	3.43	NC	3.43	6.08	6.08	4.35	4.35	4.35	6.08
22-20	7.98	7.98	5.95	NC	5.95	NC	5.95	12	12	7.98	7.98	7.98	12
22-21	7.79	7.79	6.24	NC	6.24	NC	6.24	10.6	10.6	7.79	7.79	7.79	10.6
22-22	4.04	4.04	2.99	NC	2.99	NC	2.99	6.14	6.14	4.04	4.04	4.04	6.14
22-23	6.83	6.83	5.99	NC	5.99	NC	5.99	8.2	8.2	6.83	6.83	6.83	8.2
22-24	8.1	8.1	5.68	NC	5.68	NC	5.68	13.3	13.3	8.1	8.1	8.1	13.3
22-25	7.5	7.5	5.9	NC	5.9	NC	5.9	10.5	10.5	7.5	7.5	7.5	10.5

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]											
Congener	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**
Homolog	**Hexa**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**8,213,482**	**13,630,987**	**11,079,682**	**13,630,987**	**11,079,682**	**11,079,682**	**11,079,682**	**14,273,396**	**11,079,682**	**11,079,682**	**14,273,396**	**13,630,987**
22-4	7.13	24.5	13.7	24.5	13.7	13.7	13.7	28.4	13.7	13.7	28.4	24.5
22-5	4.23	10	6.67	10	6.67	6.67	6.67	11.1	6.67	6.67	11.1	10
22-6	70.7	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
22-7	24	> 100	63.2	> 100	63.2	63.2	63.2	> 100	63.2	63.2	> 100	> 100
22-8	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
22-9	12.5	36.5	22	36.5	22	22	22	41.5	22	22	41.5	36.5
22-10	15.7	59.5	31.8	59.5	31.8	31.8	31.8	69.6	31.8	31.8	69.6	59.5
22-11	9.92	23.4	15.6	23.4	15.6	15.6	15.6	25.9	15.6	15.6	25.9	23.4
22-12	12.7	53.3	27.2	53.3	27.2	27.2	27.2	63.2	27.2	27.2	63.2	53.3
22-13	33.1	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
22-14	9.04	24.7	15.4	24.7	15.4	15.4	15.4	27.8	15.4	15.4	27.8	24.7
22-15	4.56	7.65	6	7.65	6	6	6	8.13	6	6	8.13	7.65
22-16	7.24	16.2	11.1	16.2	11.1	11.1	11.1	17.8	11.1	11.1	17.8	16.2
22-17	10.3	41.4	21.5	41.4	21.5	21.5	21.5	48.9	21.5	21.5	48.9	41.4
22-18	16.8	65.4	34.5	65.4	34.5	34.5	34.5	76.9	34.5	34.5	76.9	65.4
22-19	9.35	33.3	18.3	33.3	18.3	18.3	18.3	38.7	18.3	18.3	38.7	33.3
22-20	20.5	97.5	46.7	97.5	46.7	46.7	46.7	> 100	46.7	46.7	> 100	97.5
22-21	15.9	51.6	29.6	51.6	29.6	29.6	29.6	59.3	29.6	29.6	59.3	51.6
22-22	10.6	51.9	24.5	51.9	24.5	24.5	24.5	62.7	24.5	24.5	62.7	51.9
22-23	10.4	20.8	15	20.8	15	15	15	22.6	15	15	22.6	20.8
22-24	25.2	> 100	68.5	> 100	68.5	68.5	68.5	> 100	68.5	68.5	> 100	> 100
22-25	16.2	58.2	31.9	58.2	31.9	31.9	31.9	67.7	31.9	31.9	67.7	58.2

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]											
Congener	**183**	**184**	**185**	**187 [4]**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**
K_{fs} (L/L_{PDMS}) [1]	**11,079,682**	**14,273,396**	**11,079,682**	**11,079,682**	**17,160,396**	**13,630,987**	**13,630,987**	**13,630,987**	**37,542,856**	**31,226,788**	**31,226,788**	**41,164,924**
22-4	13.7	28.4	13.7	NC	54.9	24.5	24.5	24.5	> 100	> 100	> 100	> 100
22-5	6.67	11.1	6.67	NC	17.5	10	10	10	> 100	> 100	> 100	> 100
22-6	> 100	> 100	> 100	NC	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
22-7	63.2	> 100	63.2	NC	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
22-8	> 100	> 100	> 100	NC	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
22-9	22	41.5	22	NC	73.6	36.5	36.5	36.5	> 100	> 100	> 100	> 100
22-10	31.8	69.6	31.8	NC	> 100	59.5	59.5	59.5	> 100	> 100	> 100	> 100
22-11	15.6	25.9	15.6	NC	40.9	23.4	23.4	23.4	> 100	> 100	> 100	> 100
22-12	27.2	63.2	27.2	NC	> 100	53.3	53.3	53.3	> 100	> 100	> 100	> 100
22-13	> 100	> 100	> 100	NC	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
22-14	15.4	27.8	15.4	NC	47.4	24.7	24.7	24.7	> 100	> 100	> 100	> 100
22-15	6	8.13	6	NC	10.7	7.65	7.65	7.65	74.6	40.9	40.9	> 100
22-16	11.1	17.8	11.1	NC	27.4	16.2	16.2	16.2	> 100	> 100	> 100	> 100
22-17	21.5	48.9	21.5	NC	> 100	41.4	41.4	41.4	> 100	> 100	> 100	> 100
22-18	34.5	76.9	34.5	NC	> 100	65.4	65.4	65.4	> 100	> 100	> 100	> 100
22-19	18.3	38.7	18.3	NC	76.1	33.3	33.3	33.3	> 100	> 100	> 100	> 100
22-20	46.7	> 100	46.7	NC	> 100	97.5	97.5	97.5	> 100	> 100	> 100	> 100
22-21	29.6	59.3	29.6	NC	> 100	51.6	51.6	51.6	> 100	> 100	> 100	> 100
22-22	24.5	62.7	24.5	NC	> 100	51.9	51.9	51.9	> 100	> 100	> 100	> 100
22-23	15	22.6	15	NC	32.7	20.8	20.8	20.8	> 100	> 100	> 100	> 100
22-24	68.5	> 100	68.5	NC	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
22-25	31.9	67.7	31.9	NC	> 100	58.2	58.2	58.2	> 100	> 100	> 100	> 100

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]								
Congener	**199**	**200**	**201**	**202**	**203**	**205**	**206 [4]**	**207**	**208**
Homolog	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Nona**	**Nona**	**Nona**
K_{fs} (L/L_{PDMS}) [1]	**41,164,924**	**41,164,924**	**31,226,788**	**41,164,924**	**31,226,788**	**37,542,856**	**84,047,986**	**113,377,614**	**113,377,614**
22-4	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-5	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-6	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-7	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-8	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-9	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-10	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-11	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-12	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-13	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-14	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-15	> 100	> 100	40.9	> 100	40.9	74.6	NC	> 100	> 100
22-16	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-17	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-18	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-19	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-20	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-21	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-22	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-23	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-24	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100
22-25	> 100	> 100	> 100	> 100	> 100	> 100	NC	> 100	> 100

Notes:

1 K_{fs} (L/L_{PDMS}) is the Fiber PDMS-Solution Water Partition Coefficient (**Table 4**)

2 Regression Model for Log_{10} CF on K_{fs} (**Table 7**)

3 Correction factors (CFs) for each PCB congener were calculated using regression models developed for each sample and the K_{fs} value. If the model-predicted CF was greater than 100 (indicating the sampling period was such that less than 1% of steady state concentrations were reached), conditions were considered insufficient to quantify an accurate and precise value.

4 Correction factors for PCB-53, 75, 105/132/153, 146, 149, 187 and 206 were not calculated (see note in Table 5).

5 If CF was estimated to be less than 1, the CF was assumed to be one.

6 PCB congener properties of the less chlorinated congener were used in calculations.

7 Abbreviations:
L = liter NC = not calculated PCB = polychlorobiphenyl

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

		Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)														
Vial ID		**1**	**3**	**5**	**6**	**7**	**8**	**9**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**
Homolog		**Mono**	**Mono**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Tri**	**Tri**	**Tri**	**Tri**
K_{fs} (L/L_{PDMS}) [1]		**16,388**	**71,536**	**88,009**	**88,009**	**88,009**	**88,009**	**88,009**	**183,877**	**183,877**	**183,877**	**183,877**	**179,691**	**179,691**	**179,691**	**108,275**
S (ng/L) [2]	**Sample ID**	**2,480,000**	**2,480,000**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**139,910**	**139,910**	**139,910**	**139,910**
22-4	B22-8-MM-SR	*< 0.47*	*< 0.11*	*< 0.089*	*< 0.089*	*< 0.089*	*< 0.089*	*< 0.089*	*< 0.043*	*< 0.043*	*< 0.043*	*< 0.043*	*< 0.044*	*< 0.044*	*< 0.044*	*< 0.072*
22-5	B22-7-MM-SR	*< 0.49*	*< 0.11*	*< 0.092*	*< 0.092*	*< 0.092*	*< 0.092*	*< 0.092*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.046*	*< 0.046*	*< 0.046*	*< 0.076*
22-6	B22-6-MM-SR	*< 0.56*	*< 0.13*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.054*	*< 0.054*	*< 0.054*	*< 0.054*	*< 0.055*	*< 0.055*	*< 0.055*	*< 0.088*
22-7	B22-5-MM-SR	*< 0.65*	*< 0.15*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.061*	*< 0.061*	*< 0.061*	*< 0.061*	*< 0.062*	*< 0.062*	*< 0.062*	*< 0.1*
22-8	B22-4-MM-SR	*< 0.69*	*< 0.17*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.07*	*< 0.07*	*< 0.07*	*< 0.07*	*< 0.071*	*< 0.071*	*< 0.071*	*< 0.11*
22-9	B22-2-MM-SR	*< 1*	*< 0.24*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.096*	*< 0.096*	*< 0.096*	*< 0.096*	*< 0.099*	*< 0.099*	*< 0.099*	*< 0.16*
22-10	B22-3-MM-SR	*< 0.9*	*< 0.21*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.083*	*< 0.083*	*< 0.083*	*< 0.083*	*< 0.085*	*< 0.085*	*< 0.085*	*< 0.14*
22-11	B22-1R-MM-SR	*< 1.2*	*< 0.27*	*< 0.22*	*< 0.22*	*< 0.22*	*< 0.22*	*< 0.22*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.18*
22-12	B22-1-MM-SR	*< 0.62*	*< 0.14*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.059*	*< 0.059*	*< 0.059*	*< 0.097*
22-13	B22-9-MM-SR	*< 0.6*	*< 0.14*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.095*
22-14	B22-1R-MM-Core	*< 0.48*	*< 0.11*	*< 0.091*	*< 0.091*	*< 0.091*	*< 0.091*	*< 0.091*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.075*
22-15	B22-3-MM-Core	*< 0.51*	*< 0.12*	*< 0.095*	*< 0.095*	*< 0.095*	*< 0.095*	*< 0.095*	*< 0.046*	*< 0.046*	*< 0.046*	*< 0.046*	*< 0.047*	*< 0.047*	*< 0.047*	*< 0.078*
22-16	B22-10-MM-Core	*< 0.52*	*< 0.12*	*< 0.098*	*< 0.098*	*< 0.098*	*< 0.098*	*< 0.098*	*< 0.048*	*< 0.048*	*< 0.048*	*< 0.048*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.08*
22-17	B22-8-MM-Core	*< 0.3*	*< 0.07*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.047*
22-18	B22-4-MM-Core	*< 0.53*	*< 0.12*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.082*
22-19	B22-6-MM-Core	*< 0.33*	*< 0.078*	*< 0.063*	*< 0.063*	*< 0.063*	*< 0.063*	*< 0.063*	*< 0.031*	*< 0.031*	*< 0.031*	*< 0.031*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.052*
22-20	B22-1-MM-Core	*< 0.7*	*< 0.16*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.11*
22-21	B22-9-DUP-MM-Core	*< 0.65*	*< 0.15*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.06*	*< 0.06*	*< 0.06*	*< 0.06*	*< 0.061*	*< 0.061*	*< 0.061*	*< 0.1*
22-22	B22-5-MM-Core	*< 0.24*	*< 0.056*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.037*
22-23	B22-2-MM-Core	*< 0.89*	*< 0.2*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.17*	*< 0.081*	*< 0.081*	*< 0.081*	*< 0.081*	*< 0.082*	*< 0.082*	*< 0.082*	*< 0.14*
22-24	B22-7-MM-Core	*< 0.35*	*< 0.083*	*< 0.068*	*< 0.068*	*< 0.068*	*< 0.068*	*< 0.068*	*< 0.034*	*< 0.034*	*< 0.034*	*< 0.034*	*< 0.034*	*< 0.034*	*< 0.034*	*< 0.055*
22-25	B22-9-MM-Core	*< 0.57*	*< 0.13*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.053*	*< 0.053*	*< 0.053*	*< 0.053*	*< 0.054*	*< 0.054*	*< 0.054*	*< 0.088*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)															
Vial ID	**20**	**22**	**24**	**25**	**26**	**27**	**28/31**	**32**	**33**	**34**	**35**	**37**	**40**	**41**	**42**	**44**
Homolog	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**179,691**	**291,425**	**291,425**	**472,637**	**472,637**	**581,470**	**581,470**	**581,470**	**581,470**
S (ng/L) [2]	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**32,245**	**32,245**	**32,245**	**32,245**
22-4	*< 0.028*	*< 0.028*	*< 0.044*	*< 0.028*	*< 0.028*	*< 0.044*	*< 0.028*	*< 0.044*	*< 0.028*	*< 0.028*	*< 0.018*	*< 0.018*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*
22-5	*< 0.029*	*< 0.029*	*< 0.046*	*< 0.029*	*< 0.029*	*< 0.046*	*< 0.029*	*< 0.046*	*< 0.029*	*< 0.029*	*< 0.018*	*< 0.018*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*
22-6	*< 0.036*	*< 0.036*	*< 0.055*	*< 0.036*	*< 0.036*	*< 0.055*	*< 0.036*	*< 0.055*	*< 0.036*	*< 0.036*	*< 0.024*	*< 0.024*	*< 0.021*	*< 0.021*	*< 0.021*	**0.022**
22-7	*< 0.04*	*< 0.04*	*< 0.062*	*< 0.04*	*< 0.04*	*< 0.062*	*< 0.04*	*< 0.062*	*< 0.04*	*< 0.04*	*< 0.026*	*< 0.026*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.022*
22-8	*< 0.047*	*< 0.047*	*< 0.071*	*< 0.047*	*< 0.047*	*< 0.071*	*< 0.047*	*< 0.071*	*< 0.047*	*< 0.047*	*< 0.033*	*< 0.033*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.029*
22-9	*< 0.062*	*< 0.062*	*< 0.099*	*< 0.062*	*< 0.062*	*< 0.099*	*< 0.062*	*< 0.099*	*< 0.062*	*< 0.062*	*< 0.04*	*< 0.04*	*< 0.033*	*< 0.033*	*< 0.033*	*< 0.033*
22-10	*< 0.054*	*< 0.054*	*< 0.085*	*< 0.054*	*< 0.054*	*< 0.085*	*< 0.054*	*< 0.085*	*< 0.054*	*< 0.054*	*< 0.035*	*< 0.035*	*< 0.029*	*< 0.029*	*< 0.029*	**0.01**
22-11	*< 0.068*	*< 0.068*	*< 0.11*	*< 0.068*	*< 0.068*	*< 0.11*	*< 0.068*	*< 0.11*	*< 0.068*	*< 0.068*	*< 0.043*	*< 0.043*	*< 0.036*	*< 0.036*	*< 0.036*	**0.0081**
22-12	*< 0.038*	*< 0.038*	*< 0.059*	*< 0.038*	*< 0.038*	*< 0.059*	*< 0.038*	*< 0.059*	*< 0.038*	*< 0.038*	*< 0.024*	*< 0.024*	*< 0.02*	*< 0.02*	*< 0.02*	**0.0067**
22-13	*< 0.038*	*< 0.038*	*< 0.058*	*< 0.038*	*< 0.038*	*< 0.058*	*< 0.038*	*< 0.058*	*< 0.038*	*< 0.038*	*< 0.025*	*< 0.025*	*< 0.021*	*< 0.021*	*< 0.021*	**0.0046**
22-14	*< 0.029*	*< 0.029*	*< 0.045*	*< 0.029*	*< 0.029*	*< 0.045*	*< 0.029*	*< 0.045*	*< 0.029*	*< 0.029*	*< 0.018*	*< 0.018*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.015*
22-15	*< 0.03*	*< 0.03*	*< 0.047*	*< 0.03*	*< 0.03*	*< 0.047*	*< 0.03*	*< 0.047*	*< 0.03*	*< 0.03*	*< 0.018*	*< 0.018*	*< 0.015*	*< 0.015*	*< 0.015*	**0.0029**
22-16	*< 0.031*	*< 0.031*	*< 0.049*	*< 0.031*	*< 0.031*	*< 0.049*	*< 0.031*	*< 0.049*	*< 0.031*	*< 0.031*	*< 0.019*	*< 0.019*	*< 0.016*	*< 0.016*	*< 0.016*	**0.0024**
22-17	*< 0.018*	*< 0.018*	*< 0.029*	*< 0.018*	*< 0.018*	*< 0.029*	*< 0.018*	*< 0.029*	*< 0.018*	*< 0.018*	*< 0.012*	*< 0.012*	*< 0.0099*	*< 0.0099*	*< 0.0099*	**0.0057**
22-18	*< 0.032*	*< 0.032*	*< 0.05*	*< 0.032*	*< 0.032*	*< 0.05*	*< 0.032*	*< 0.05*	*< 0.032*	*< 0.032*	*< 0.02*	*< 0.02*	*< 0.017*	*< 0.017*	*< 0.017*	*< 0.017*
22-19	*< 0.02*	*< 0.02*	*< 0.032*	*< 0.02*	*< 0.02*	*< 0.032*	*< 0.02*	*< 0.032*	*< 0.02*	*< 0.02*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*
22-20	*< 0.043*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.043*	*< 0.028*	*< 0.028*	*< 0.023*	*< 0.023*	*< 0.023*	**0.0075**
22-21	*< 0.039*	*< 0.039*	*< 0.061*	*< 0.039*	*< 0.039*	*< 0.061*	*< 0.039*	*< 0.061*	*< 0.039*	*< 0.039*	*< 0.025*	*< 0.025*	*< 0.021*	*< 0.021*	*< 0.021*	*< 0.021*
22-22	*< 0.014*	*< 0.014*	*< 0.022*	*< 0.014*	*< 0.014*	*< 0.022*	*< 0.014*	*< 0.022*	*< 0.014*	*< 0.014*	*< 0.0091*	*< 0.0091*	*< 0.0077*	*< 0.0077*	*< 0.0077*	**0.0014**
22-23	*< 0.052*	*< 0.052*	*< 0.082*	*< 0.052*	*< 0.052*	*< 0.082*	*< 0.052*	*< 0.082*	*< 0.052*	*< 0.052*	*< 0.033*	*< 0.033*	*< 0.027*	*< 0.027*	*< 0.027*	*< 0.027*
22-24	*< 0.022*	*< 0.022*	*< 0.034*	*< 0.022*	*< 0.022*	*< 0.034*	*< 0.022*	*< 0.034*	*< 0.022*	*< 0.022*	*< 0.014*	*< 0.014*	*< 0.012*	*< 0.012*	*< 0.012*	**0.0023**
22-25	*< 0.034*	*< 0.034*	*< 0.054*	*< 0.034*	*< 0.034*	*< 0.054*	*< 0.034*	*< 0.054*	*< 0.034*	*< 0.034*	*< 0.022*	*< 0.022*	*< 0.018*	*< 0.018*	*< 0.018*	**0.018**

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)															
Vial ID	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**	**67/100 [7]**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**402,279**	**402,279**	**581,470**	**581,470**	**581,470**	**402,279**	**581,470**	**402,279**	**441,090**	**840,480**	**581,470**	**840,480**	**840,480**	**581,470**	**840,480**	**840,480**
S (ng/L) [2]	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**
22-4	< 0.021	< 0.021	< 0.015	< 0.015	< 0.015	< 0.021	< 0.015	< 0.021	NC	< 0.011	< 0.015	< 0.011	< 0.011	< 0.015	< 0.011	< 0.011
22-5	< 0.021	< 0.021	< 0.015	< 0.015	< 0.015	< 0.021	< 0.015	< 0.021	NC	< 0.011	< 0.015	< 0.011	< 0.011	< 0.015	< 0.011	< 0.011
22-6	< 0.027	< 0.027	< 0.021	< 0.021	**0.0078**	< 0.027	**0.033**	< 0.027	NC	< 0.016	< 0.021	< 0.016	< 0.016	< 0.021	< 0.016	< 0.016
22-7	< 0.03	< 0.03	< 0.022	< 0.022	< 0.022	**0.016**	< 0.022	< 0.03	NC	< 0.017	< 0.022	< 0.017	< 0.017	< 0.022	< 0.017	< 0.017
22-8	< 0.037	< 0.037	< 0.029	< 0.029	< 0.029	< 0.037	< 0.029	< 0.037	NC	< 0.024	< 0.029	< 0.024	< 0.024	< 0.029	< 0.024	< 0.024
22-9	< 0.046	< 0.046	< 0.033	< 0.033	**0.024**	**0.031**	< 0.033	< 0.046	NC	< 0.024	< 0.033	< 0.024	< 0.024	< 0.033	< 0.024	< 0.024
22-10	< 0.04	< 0.04	< 0.029	< 0.029	< 0.029	< 0.04	< 0.029	< 0.04	NC	< 0.021	< 0.029	< 0.021	< 0.021	< 0.029	< 0.021	< 0.021
22-11	< 0.05	< 0.05	< 0.036	< 0.036	< 0.036	< 0.05	< 0.036	< 0.05	NC	< 0.026	< 0.036	< 0.026	< 0.026	< 0.036	< 0.026	< 0.026
22-12	< 0.028	< 0.028	< 0.02	< 0.02	< 0.02	< 0.028	< 0.02	< 0.028	NC	< 0.015	< 0.02	< 0.015	< 0.015	< 0.02	< 0.015	< 0.015
22-13	< 0.029	< 0.029	< 0.021	< 0.021	< 0.021	< 0.029	< 0.021	< 0.029	NC	< 0.016	< 0.021	< 0.016	< 0.016	< 0.021	< 0.016	< 0.016
22-14	< 0.021	< 0.021	< 0.015	< 0.015	**0.0021**	**0.012**	< 0.015	< 0.021	NC	< 0.011	< 0.015	< 0.011	< 0.011	< 0.015	< 0.011	< 0.011
22-15	< 0.022	< 0.022	< 0.015	< 0.015	< 0.015	**0.0097**	< 0.015	< 0.022	NC	< 0.011	< 0.015	< 0.011	< 0.011	< 0.015	< 0.011	< 0.011
22-16	< 0.023	< 0.023	< 0.016	< 0.016	**0.0017**	< 0.023	< 0.016	< 0.023	NC	< 0.012	< 0.016	< 0.012	< 0.012	< 0.016	< 0.012	< 0.012
22-17	< 0.014	< 0.014	< 0.0099	< 0.0099	< 0.0099	< 0.014	< 0.0099	< 0.014	NC	< 0.0073	< 0.0099	< 0.0073	< 0.0073	< 0.0099	< 0.0073	< 0.0073
22-18	< 0.024	< 0.024	< 0.017	< 0.017	**0.0042**	< 0.024	< 0.017	< 0.024	NC	< 0.013	< 0.017	< 0.013	< 0.013	< 0.017	< 0.013	< 0.013
22-19	< 0.015	< 0.015	< 0.011	< 0.011	< 0.011	**0.0065**	< 0.011	< 0.015	NC	< 0.0079	< 0.011	< 0.0079	< 0.0079	< 0.011	< 0.0079	< 0.0079
22-20	< 0.032	< 0.032	< 0.023	< 0.023	**0.027**	< 0.032	< 0.023	< 0.032	NC	< 0.017	< 0.023	< 0.017	< 0.017	< 0.023	< 0.017	< 0.017
22-21	< 0.029	< 0.029	< 0.021	< 0.021	< 0.021	**0.026**	< 0.021	< 0.029	NC	< 0.015	< 0.021	< 0.015	< 0.015	< 0.021	< 0.015	< 0.015
22-22	< 0.011	< 0.011	< 0.0077	< 0.0077	< 0.0077	**0.003**	**0.0014**	< 0.011	NC	< 0.0058	< 0.0077	< 0.0058	< 0.0058	< 0.0077	< 0.0058	< 0.0058
22-23	< 0.038	< 0.038	< 0.027	< 0.027	**0.036**	< 0.038	< 0.027	< 0.038	NC	< 0.019	< 0.027	< 0.019	< 0.019	< 0.027	< 0.019	< 0.019
22-24	< 0.017	< 0.017	< 0.012	< 0.012	**0.0028**	**0.01**	< 0.012	< 0.017	NC	< 0.0092	< 0.012	< 0.0092	< 0.0092	< 0.012	< 0.0092	< 0.0092
22-25	< 0.026	< 0.026	< 0.018	< 0.018	< 0.018	< 0.026	< 0.018	< 0.026	NC	< 0.014	< 0.018	< 0.014	< 0.014	< 0.018	< 0.014	< 0.014

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)													
Vial ID	**70**	**71**	**73**	**74**	**75**	**77**	**81/117 [7]**	**82**	**83**	**84**	**85**	**87/115**	**90/101**	**91**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**840,480**	**581,470**	**581,470**	**840,480**	**581,470**	**1,214,863**	**1,214,863**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,756,011**	**1,756,011**	**1,301,749**
S (ng/L) [2]	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**
22-4	*< 0.011*	*< 0.015*	*< 0.015*	*< 0.011*	*NC*	*< 0.0083*	*< 0.0083*	*< 0.0065*	*< 0.0065*	*< 0.0079*	*< 0.0065*	*< 0.0065*	*< 0.0065*	*< 0.0079*
22-5	*< 0.011*	*< 0.015*	*< 0.015*	*< 0.011*	*NC*	*< 0.008*	*< 0.008*	*< 0.006*	*< 0.006*	*< 0.0076*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.0076*
22-6	*< 0.016*	*< 0.021*	*< 0.021*	*< 0.016*	*NC*	*< 0.013*	**0.013**	*< 0.012*	*< 0.012*	**0.0031**	*< 0.012*	*< 0.012*	**0.01**	*< 0.013*
22-7	*< 0.017*	*< 0.022*	*< 0.022*	*< 0.017*	*NC*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.013*
22-8	*< 0.024*	*< 0.029*	*< 0.029*	*< 0.024*	*NC*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.021*	*< 0.022*	*< 0.022*	*< 0.022*	*< 0.021*
22-9	*< 0.024*	*< 0.033*	*< 0.033*	*< 0.024*	*NC*	*< 0.018*	*< 0.018*	*< 0.014*	*< 0.014*	*< 0.017*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.017*
22-10	*< 0.021*	*< 0.029*	*< 0.029*	*< 0.021*	*NC*	*< 0.016*	*< 0.016*	*< 0.013*	*< 0.013*	*< 0.016*	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.016*
22-11	*< 0.026*	*< 0.036*	*< 0.036*	*< 0.026*	*NC*	*< 0.019*	*< 0.019*	*< 0.014*	*< 0.014*	*< 0.018*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.018*
22-12	*< 0.015*	*< 0.02*	*< 0.02*	*< 0.015*	*NC*	*< 0.012*	*< 0.012*	*< 0.0092*	*< 0.0092*	*< 0.011*	*< 0.0092*	*< 0.0092*	*< 0.0092*	*< 0.011*
22-13	*< 0.016*	*< 0.021*	*< 0.021*	*< 0.016*	*NC*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.013*
22-14	*< 0.011*	*< 0.015*	*< 0.015*	*< 0.011*	*NC*	*< 0.0082*	*< 0.0082*	*< 0.0062*	*< 0.0062*	*< 0.0077*	*< 0.0062*	*< 0.0062*	*< 0.0062*	*< 0.0077*
22-15	*< 0.011*	*< 0.015*	*< 0.015*	*< 0.011*	*NC*	*< 0.0077*	*< 0.0077*	*< 0.0056*	*< 0.0056*	*< 0.0073*	*< 0.0056*	**0.0035**	**0.0032**	*< 0.0073*
22-16	*< 0.012*	*< 0.016*	*< 0.016*	*< 0.012*	*NC*	*< 0.0084*	*< 0.0084*	*< 0.0063*	*< 0.0063*	*< 0.008*	*< 0.0063*	*< 0.0063*	*< 0.0063*	*< 0.008*
22-17	*< 0.0073*	*< 0.0099*	*< 0.0099*	*< 0.0073*	*NC*	*< 0.0056*	*< 0.0056*	*< 0.0044*	*< 0.0044*	*< 0.0053*	*< 0.0044*	*< 0.0044*	*< 0.0044*	*< 0.0053*
22-18	*< 0.013*	*< 0.017*	*< 0.017*	*< 0.013*	*NC*	*< 0.0096*	*< 0.0096*	*< 0.0076*	*< 0.0076*	*< 0.0092*	*< 0.0076*	*< 0.0076*	*< 0.0076*	*< 0.0092*
22-19	*< 0.0079*	*< 0.011*	*< 0.011*	*< 0.0079*	*NC*	*< 0.006*	*< 0.006*	*< 0.0047*	*< 0.0047*	*< 0.0057*	*< 0.0047*	*< 0.0047*	*< 0.0047*	*< 0.0057*
22-20	*< 0.017*	*< 0.023*	*< 0.023*	*< 0.017*	*NC*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.013*
22-21	*< 0.015*	*< 0.021*	*< 0.021*	*< 0.015*	*NC*	*< 0.011*	*< 0.011*	*< 0.0089*	*< 0.0089*	*< 0.011*	*< 0.0089*	*< 0.0089*	*< 0.0089*	*< 0.011*
22-22	*< 0.0058*	*< 0.0077*	*< 0.0077*	*< 0.0058*	*NC*	*< 0.0044*	*< 0.0044*	*< 0.0036*	*< 0.0036*	*< 0.0042*	*< 0.0036*	*< 0.0036*	*< 0.0036*	*< 0.0042*
22-23	*< 0.019*	*< 0.027*	*< 0.027*	*< 0.019*	*NC*	*< 0.014*	*< 0.014*	*< 0.01*	*< 0.01*	*< 0.013*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.013*
22-24	*< 0.0092*	*< 0.012*	*< 0.012*	*< 0.0092*	*NC*	*< 0.0073*	*< 0.0073*	*< 0.0061*	*< 0.0061*	*< 0.007*	*< 0.0061*	*< 0.0061*	*< 0.0061*	*< 0.007*
22-25	*< 0.014*	*< 0.018*	*< 0.018*	*< 0.014*	*NC*	*< 0.01*	**0.016**	*< 0.008*	*< 0.008*	*< 0.0097*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.0097*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] (ng $_{PCB}$/L $_{Porewater}$)												
Vial ID	**92**	**93**	**95**	**97**	**99**	**103**	**105/132/153 [7]**	**107**	**110**	**114**	**118**	**119**	**122**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**1,301,749**	**1,301,749**	**1,756,011**	**1,756,011**	**1,301,749**	**2,368,794**	**2,368,794**	**1,756,011**	**2,368,794**	**2,368,794**	**1,756,011**	**2,368,794**
S (ng/L) [2]	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**
22-4	*< 0.0065*	*< 0.0079*	*< 0.0079*	*< 0.0065*	*< 0.0065*	*< 0.0079*	*NC*	*< 0.0056*	*< 0.0065*	*< 0.0056*	*< 0.0056*	*< 0.0065*	*< 0.0056*
22-5	*< 0.006*	*< 0.0076*	*< 0.0076*	*< 0.006*	*< 0.006*	*< 0.0076*	*NC*	*< 0.0049*	*< 0.006*	*< 0.0049*	*< 0.0049*	*< 0.006*	*< 0.0049*
22-6	*< 0.012*	*< 0.013*	**0.011**	*< 0.012*	*< 0.012*	*< 0.013*	*NC*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.012*
22-7	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*NC*	*< 0.0099*	*< 0.011*	*< 0.0099*	*< 0.0099*	*< 0.011*	*< 0.0099*
22-8	*< 0.022*	*< 0.021*	*< 0.021*	*< 0.022*	*< 0.022*	*< 0.021*	*NC*	*< 0.025*	*< 0.022*	*< 0.025*	*< 0.025*	*< 0.022*	*< 0.025*
22-9	*< 0.014*	*< 0.017*	*< 0.017*	*< 0.014*	*< 0.014*	*< 0.017*	*NC*	*< 0.012*	*< 0.014*	*< 0.012*	*< 0.012*	*< 0.014*	*< 0.012*
22-10	*< 0.013*	*< 0.016*	*< 0.016*	*< 0.013*	*< 0.013*	*< 0.016*	*NC*	*< 0.011*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.011*
22-11	*< 0.014*	*< 0.018*	*< 0.018*	*< 0.014*	*< 0.014*	*< 0.018*	*NC*	*< 0.012*	*< 0.014*	*< 0.012*	*< 0.012*	*< 0.014*	*< 0.012*
22-12	*< 0.0092*	*< 0.011*	*< 0.011*	*< 0.0092*	*< 0.0092*	*< 0.011*	*NC*	*< 0.008*	*< 0.0092*	*< 0.008*	*< 0.008*	*< 0.0092*	*< 0.008*
22-13	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*NC*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*
22-14	*< 0.0062*	*< 0.0077*	*< 0.0077*	*< 0.0062*	*< 0.0062*	*< 0.0077*	*NC*	*< 0.0052*	*< 0.0062*	*< 0.0052*	*< 0.0052*	*< 0.0062*	*< 0.0052*
22-15	*< 0.0056*	*< 0.0073*	**0.0025**	*< 0.0056*	*< 0.0056*	*< 0.0073*	*NC*	*< 0.0044*	*< 0.0056*	*< 0.0044*	*< 0.0044*	*< 0.0056*	*< 0.0044*
22-16	*< 0.0063*	*< 0.008*	**0.0015**	*< 0.0063*	*< 0.0063*	*< 0.008*	*NC*	*< 0.0051*	*< 0.0063*	*< 0.0051*	*< 0.0051*	*< 0.0063*	*< 0.0051*
22-17	*< 0.0044*	*< 0.0053*	*< 0.0053*	*< 0.0044*	*< 0.0044*	*< 0.0053*	*NC*	*< 0.0039*	*< 0.0044*	*< 0.0039*	*< 0.0039*	*< 0.0044*	*< 0.0039*
22-18	*< 0.0076*	*< 0.0092*	*< 0.0092*	*< 0.0076*	*< 0.0076*	*< 0.0092*	*NC*	*< 0.0066*	*< 0.0076*	*< 0.0066*	*< 0.0066*	*< 0.0076*	*< 0.0066*
22-19	*< 0.0047*	*< 0.0057*	*< 0.0057*	*< 0.0047*	*< 0.0047*	*< 0.0057*	*NC*	*< 0.004*	*< 0.0047*	*< 0.004*	*< 0.004*	*< 0.0047*	*< 0.004*
22-20	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*NC*	*< 0.0096*	*< 0.011*	*< 0.0096*	*< 0.0096*	*< 0.011*	*< 0.0096*
22-21	*< 0.0089*	*< 0.011*	*< 0.011*	*< 0.0089*	*< 0.0089*	*< 0.011*	*NC*	*< 0.0075*	*< 0.0089*	*< 0.0075*	*< 0.0075*	*< 0.0089*	*< 0.0075*
22-22	*< 0.0036*	*< 0.0042*	*< 0.0042*	*< 0.0036*	*< 0.0036*	*< 0.0042*	*NC*	*< 0.0032*	*< 0.0036*	*< 0.0032*	*< 0.0032*	*< 0.0036*	*< 0.0032*
22-23	*< 0.01*	*< 0.013*	*< 0.013*	*< 0.01*	*< 0.01*	*< 0.013*	*NC*	*< 0.0083*	*< 0.01*	*< 0.0083*	*< 0.0083*	*< 0.01*	*< 0.0083*
22-24	*< 0.0061*	*< 0.007*	*< 0.007*	*< 0.0061*	*< 0.0061*	*< 0.007*	*NC*	*< 0.0056*	*< 0.0061*	*< 0.0056*	*< 0.0056*	*< 0.0061*	*< 0.0056*
22-25	*< 0.008*	*< 0.0097*	*< 0.0097*	*< 0.008*	*< 0.008*	*< 0.0097*	*NC*	*< 0.0069*	*< 0.008*	*< 0.0069*	*< 0.0069*	*< 0.008*	*< 0.0069*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)												
	123	124	126	128	129	130	131	134	135	136	137	138/163	141
Homolog	Penta	Penta	Penta	Hexa	Hexa	Hexa	Hexa	Hexa	Hexa	Hexa	Hexa	Hexa	Hexa
K_{fs} (L/L_{PDMS}) [1]	2,368,794	2,368,794	3,195,415	4,949,112	4,949,112	4,949,112	3,931,220	3,931,220	3,931,220	4,836,457	4,949,112	4,949,112	4,949,112
S (ng/L) [2]	7,328	7,328	7,328	1,647	1,647	1,647	1,647	1,647	1,647	1,647	1,647	1,647	1,647
22-4	< 0.0056	< 0.0056	< 0.005	< 0.0048	< 0.0048	< 0.0048	< 0.0048	< 0.0048	< 0.0048	< 0.0048	< 0.0048	< 0.0048	**0.014**
22-5	< 0.0049	< 0.0049	< 0.0042	< 0.0036	< 0.0036	< 0.0036	< 0.0038	< 0.0038	< 0.0038	< 0.0036	< 0.0036	< 0.0036	< 0.0036
22-6	< 0.012	< 0.012	< 0.013	< 0.02	< 0.02	< 0.02	< 0.016	< 0.016	< 0.016	< 0.02	< 0.02	< 0.02	**0.041**
22-7	< 0.0099	< 0.0099	< 0.0097	< 0.011	< 0.011	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.011	< 0.011	< 0.011
22-8	< 0.025	< 0.025	< 0.033	< 0.073	< 0.073	< 0.073	< 0.045	< 0.045	< 0.045	< 0.069	< 0.073	< 0.073	**0.084**
22-9	< 0.012	< 0.012	< 0.01	< 0.0092	< 0.0092	< 0.0092	< 0.0095	< 0.0095	< 0.0095	< 0.0092	< 0.0092	< 0.0092	< 0.0092
22-10	< 0.011	< 0.011	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0098	< 0.0098	< 0.0098	< 0.0099	< 0.01	< 0.01	< 0.01
22-11	< 0.012	< 0.012	< 0.0098	< 0.0084	< 0.0084	< 0.0084	< 0.009	< 0.009	< 0.009	< 0.0084	< 0.0084	< 0.0084	**0.012**
22-12	< 0.008	< 0.008	< 0.0074	< 0.0076	< 0.0076	< 0.0076	< 0.0073	< 0.0073	< 0.0073	< 0.0076	< 0.0076	< 0.0076	< 0.0076
22-13	< 0.011	< 0.011	< 0.011	< 0.014	< 0.014	< 0.014	< 0.012	< 0.012	< 0.012	< 0.014	< 0.014	< 0.014	**0.016**
22-14	< 0.0052	< 0.0052	< 0.0045	< 0.004	< 0.004	< 0.004	< 0.0042	< 0.0042	< 0.0042	< 0.004	< 0.004	**0.0024**	**0.0078**
22-15	< 0.0044	< 0.0044	< 0.0035	< 0.0027	< 0.0027	< 0.0027	< 0.0031	< 0.0031	< 0.0031	< 0.0027	< 0.0027	**0.0018**	**0.0035**
22-16	< 0.0051	< 0.0051	< 0.0043	< 0.0036	< 0.0036	< 0.0036	< 0.0039	< 0.0039	< 0.0039	< 0.0036	< 0.0036	**0.0017**	**0.0063**
22-17	< 0.0039	< 0.0039	< 0.0035	< 0.0036	< 0.0036	< 0.0036	< 0.0035	< 0.0035	< 0.0035	< 0.0036	< 0.0036	< 0.0036	**0.0056**
22-18	< 0.0066	< 0.0066	< 0.006	< 0.006	< 0.006	< 0.006	< 0.0059	< 0.0059	< 0.0059	< 0.006	< 0.006	< 0.006	< 0.006
22-19	< 0.004	< 0.004	< 0.0036	< 0.0035	< 0.0035	< 0.0035	< 0.0035	< 0.0035	< 0.0035	< 0.0035	< 0.0035	< 0.0035	**0.0052**
22-20	< 0.0096	< 0.0096	< 0.009	< 0.0097	< 0.0097	< 0.0097	< 0.0091	< 0.0091	< 0.0091	< 0.0096	< 0.0097	< 0.0097	**0.0094**
22-21	< 0.0075	< 0.0075	< 0.0067	< 0.0063	< 0.0063	< 0.0063	< 0.0063	< 0.0063	< 0.0063	< 0.0063	< 0.0063	< 0.0063	**0.014**
22-22	< 0.0032	< 0.0032	< 0.003	< 0.0033	< 0.0033	< 0.0033	< 0.003	< 0.003	< 0.003	< 0.0032	< 0.0033	**0.0022**	**0.0059**
22-23	< 0.0083	< 0.0083	< 0.0068	< 0.0055	< 0.0055	< 0.0055	< 0.0061	< 0.0061	< 0.0061	< 0.0056	< 0.0055	< 0.0055	**0.0066**
22-24	< 0.0056	< 0.0056	< 0.0055	< 0.0065	< 0.0065	< 0.0065	< 0.0058	< 0.0058	< 0.0058	< 0.0064	< 0.0065	< 0.0065	**0.0089**
22-25	< 0.0069	< 0.0069	< 0.0062	< 0.0061	< 0.0061	< 0.0061	< 0.006	< 0.006	< 0.006	< 0.006	< 0.0061	**0.0043**	**0.01**

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)												
Vial ID	**144**	**146**	**147**	**149**	**151**	**156**	**157**	**158**	**164**	**165**	**167**	**169**	**170**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**3,931,220**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**6,375,692**	**6,375,692**	**4,949,112**	**4,949,112**	**4,949,112**	**6,375,692**	**8,213,482**	**13,630,987**
S (ng/L) [2]	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**367**
22-4	*< 0.0048*	*NC*	*< 0.0048*	*NC*	*< 0.0048*	*< 0.0051*	*< 0.0051*	*< 0.0048*	*< 0.0048*	*< 0.0048*	*< 0.0051*	*< 0.0061*	*< 0.013*
22-5	*< 0.0038*	*NC*	*< 0.0038*	*NC*	*< 0.0038*	*< 0.0035*	*< 0.0035*	*< 0.0036*	*< 0.0036*	*< 0.0036*	*< 0.0035*	*< 0.0036*	*< 0.0051*
22-6	*< 0.016*	*NC*	*< 0.016*	*NC*	*< 0.016*	*< 0.032*	*< 0.032*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.032*	*< 0.06*	*NC*
22-7	*< 0.01*	*NC*	*< 0.01*	*NC*	*< 0.01*	*< 0.014*	*< 0.014*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.014*	*< 0.02*	*NC*
22-8	*< 0.045*	*NC*	*< 0.045*	*NC*	*< 0.045*	*NC*	*NC*	*< 0.073*	*< 0.073*	*< 0.073*	*NC*	*NC*	*NC*
22-9	*< 0.0095*	*NC*	*< 0.0095*	*NC*	*< 0.0095*	*< 0.0095*	*< 0.0095*	*< 0.0092*	*< 0.0092*	*< 0.0092*	*< 0.0095*	*< 0.011*	*< 0.019*
22-10	*< 0.0098*	*NC*	*< 0.0098*	*NC*	*< 0.0098*	*< 0.011*	*< 0.011*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.011*	*< 0.013*	*< 0.031*
22-11	*< 0.009*	*NC*	*< 0.009*	*NC*	*< 0.009*	*< 0.0081*	*< 0.0081*	*< 0.0084*	*< 0.0084*	*< 0.0084*	*< 0.0081*	*< 0.0085*	*< 0.012*
22-12	*< 0.0073*	*NC*	*< 0.0073*	*NC*	*< 0.0073*	*< 0.0086*	*< 0.0086*	*< 0.0076*	*< 0.0076*	*< 0.0076*	*< 0.0086*	*< 0.011*	*< 0.027*
22-13	*< 0.012*	*NC*	*< 0.012*	*NC*	*< 0.012*	*< 0.02*	*< 0.02*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.02*	*< 0.032*	*NC*
22-14	*< 0.0042*	*NC*	*< 0.0042*	*NC*	*< 0.0042*	*< 0.004*	*< 0.004*	**0.00073**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.0044*	*< 0.0072*
22-15	*< 0.0031*	*NC*	*< 0.0031*	*NC*	*< 0.0031*	*< 0.0024*	*< 0.0024*	*< 0.0027*	*< 0.0027*	*< 0.0027*	*< 0.0024*	*< 0.0022*	*< 0.0022*
22-16	*< 0.0039*	*NC*	*< 0.0039*	*NC*	*< 0.0039*	*< 0.0035*	*< 0.0035*	*< 0.0036*	*< 0.0036*	*< 0.0036*	*< 0.0035*	*< 0.0035*	*< 0.0048*
22-17	*< 0.0035*	*NC*	*< 0.0035*	*NC*	*< 0.0035*	*< 0.004*	*< 0.004*	*< 0.0036*	*< 0.0036*	*< 0.0036*	*< 0.004*	*< 0.005*	*< 0.012*
22-18	*< 0.0059*	*NC*	*< 0.0059*	*NC*	*< 0.0059*	*< 0.0067*	*< 0.0067*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.0067*	*< 0.0082*	*< 0.019*
22-19	*< 0.0035*	*NC*	*< 0.0035*	*NC*	*< 0.0035*	*< 0.0038*	*< 0.0038*	*< 0.0035*	*< 0.0035*	*< 0.0035*	*< 0.0038*	*< 0.0046*	*< 0.0098*
22-20	*< 0.0091*	*NC*	*< 0.0091*	*NC*	*< 0.0091*	*< 0.011*	*< 0.011*	*< 0.0097*	*< 0.0097*	*< 0.0097*	*< 0.011*	*< 0.015*	*< 0.043*
22-21	*< 0.0063*	*NC*	*< 0.0063*	*NC*	*< 0.0063*	*< 0.0067*	*< 0.0067*	*< 0.0063*	*< 0.0063*	*< 0.0063*	*< 0.0067*	*< 0.0077*	*< 0.015*
22-22	*< 0.003*	*NC*	*< 0.003*	*NC*	*< 0.003*	*< 0.0039*	*< 0.0039*	*< 0.0033*	*< 0.0033*	*< 0.0033*	*< 0.0039*	*< 0.0052*	*< 0.015*
22-23	*< 0.0061*	*NC*	*< 0.0061*	*NC*	*< 0.0061*	*< 0.0051*	*< 0.0051*	*< 0.0055*	*< 0.0055*	*< 0.0055*	*< 0.0051*	*< 0.0051*	*< 0.0061*
22-24	*< 0.0058*	*NC*	*< 0.0058*	*NC*	*< 0.0058*	*< 0.0083*	*< 0.0083*	*< 0.0065*	*< 0.0065*	*< 0.0065*	*< 0.0083*	*< 0.012*	*NC*
22-25	*< 0.006*	*NC*	*< 0.006*	*NC*	*< 0.006*	*< 0.0066*	*< 0.0066*	*< 0.0061*	*< 0.0061*	*< 0.0061*	*< 0.0066*	*< 0.0079*	*< 0.017*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] (ng $_{PCB}$/L $_{Porewater}$)												
Vial ID	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**184**	**185**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**11,079,682**	**13,630,987**	**11,079,682**	**11,079,682**	**11,079,682**	**14,273,396**	**11,079,682**	**11,079,682**	**14,273,396**	**13,630,987**	**11,079,682**	**14,273,396**	**11,079,682**
S (ng/L) [2]	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**
22-4	*< 0.0087*	*< 0.013*	*< 0.0087*	*< 0.0087*	*< 0.0087*	*< 0.014*	*< 0.0087*	*< 0.0087*	*< 0.014*	*< 0.013*	*< 0.0087*	*< 0.014*	*< 0.0087*
22-5	*< 0.0042*	*< 0.0051*	*< 0.0042*	*< 0.0042*	*< 0.0042*	*< 0.0054*	*< 0.0042*	*< 0.0042*	*< 0.0054*	*< 0.0051*	*< 0.0042*	*< 0.0054*	*< 0.0042*
22-6	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-7	*< 0.04*	*NC*	*< 0.04*	*< 0.04*	*< 0.04*	*NC*	*< 0.04*	*< 0.04*	*NC*	*NC*	*< 0.04*	*NC*	*< 0.04*
22-8	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-9	*< 0.014*	*< 0.019*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.02*	*< 0.014*	*< 0.014*	*< 0.02*	*< 0.019*	*< 0.014*	*< 0.02*	*< 0.014*
22-10	*< 0.02*	*< 0.031*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.034*	*< 0.02*	*< 0.02*	*< 0.034*	*< 0.031*	*< 0.02*	*< 0.034*	*< 0.02*
22-11	*< 0.0099*	*< 0.012*	*< 0.0099*	*< 0.0099*	*< 0.0099*	*< 0.013*	*< 0.0099*	*< 0.0099*	*< 0.013*	*< 0.012*	*< 0.0099*	*< 0.013*	*< 0.0099*
22-12	*< 0.017*	*< 0.027*	*< 0.017*	*< 0.017*	*< 0.017*	*< 0.031*	*< 0.017*	*< 0.017*	*< 0.031*	*< 0.027*	*< 0.017*	*< 0.031*	*< 0.017*
22-13	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-14	*< 0.0056*	*< 0.0072*	*< 0.0056*	*< 0.0056*	*< 0.0056*	*< 0.0078*	*< 0.0056*	*< 0.0056*	*< 0.0078*	*< 0.0072*	*< 0.0056*	*< 0.0078*	*< 0.0056*
22-15	*< 0.0022*	*< 0.0022*	*< 0.0022*	*< 0.0022*	*< 0.0022*	*< 0.0023*	*< 0.0022*	*< 0.0022*	*< 0.0023*	**0.00043**	*< 0.0022*	*< 0.0023*	*< 0.0022*
22-16	*< 0.004*	*< 0.0048*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.005*	*< 0.004*	*< 0.004*	*< 0.005*	**0.00088**	*< 0.004*	*< 0.005*	*< 0.004*
22-17	*< 0.0078*	*< 0.012*	*< 0.0078*	*< 0.0078*	*< 0.0078*	*< 0.014*	*< 0.0078*	*< 0.0078*	*< 0.014*	*< 0.012*	*< 0.0078*	*< 0.014*	*< 0.0078*
22-18	*< 0.012*	*< 0.019*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.022*	*< 0.012*	*< 0.012*	*< 0.022*	**0.0053**	*< 0.012*	*< 0.022*	*< 0.012*
22-19	*< 0.0066*	*< 0.0098*	*< 0.0066*	*< 0.0066*	*< 0.0066*	*< 0.011*	*< 0.0066*	*< 0.0066*	*< 0.011*	*< 0.0098*	*< 0.0066*	*< 0.011*	*< 0.0066*
22-20	*< 0.025*	*< 0.043*	*< 0.025*	*< 0.025*	*< 0.025*	*NC*	*< 0.025*	*< 0.025*	*NC*	*< 0.043*	*< 0.025*	*NC*	*< 0.025*
22-21	*< 0.011*	*< 0.015*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.017*	*< 0.011*	*< 0.011*	*< 0.017*	**0.0033**	*< 0.011*	*< 0.017*	*< 0.011*
22-22	*< 0.0088*	*< 0.015*	*< 0.0088*	*< 0.0088*	*< 0.0088*	*< 0.018*	*< 0.0088*	*< 0.0088*	*< 0.018*	*< 0.015*	*< 0.0088*	*< 0.018*	*< 0.0088*
22-23	*< 0.0054*	*< 0.0061*	*< 0.0054*	*< 0.0054*	*< 0.0054*	*< 0.0063*	*< 0.0054*	*< 0.0054*	*< 0.0063*	*< 0.0061*	*< 0.0054*	*< 0.0063*	*< 0.0054*
22-24	*< 0.025*	*NC*	*< 0.025*	*< 0.025*	*< 0.025*	*NC*	*< 0.025*	*< 0.025*	*NC*	*NC*	*< 0.025*	*NC*	*< 0.025*
22-25	*< 0.012*	*< 0.017*	*< 0.012*	*< 0.012*	*< 0.012*	*< 0.019*	*< 0.012*	*< 0.012*	*< 0.019*	*< 0.017*	*< 0.012*	*< 0.019*	*< 0.012*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)										
Vial ID	**187**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**
K_{fs} (L/L_{PDMS}) [1]	**11,079,682**	**17,160,396**	**13,630,987**	**13,630,987**	**13,630,987**	**37,542,856**	**31,226,788**	**31,226,788**	**41,164,924**	**41,164,924**	**41,164,924**
S (ng/L) [2]	**367**	**367**	**367**	**367**	**367**	**81**	**81**	**81**	**81**	**81**	**81**
22-4	*NC*	*< 0.022*	*< 0.013*	*< 0.013*	*< 0.013*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-5	*NC*	*< 0.0071*	*< 0.0051*	*< 0.0051*	*< 0.0051*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-6	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-7	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-8	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-9	*NC*	*< 0.03*	*< 0.019*	*< 0.019*	*< 0.019*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-10	*NC*	*NC*	*< 0.031*	*< 0.031*	*< 0.031*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-11	*NC*	*< 0.017*	*< 0.012*	*< 0.012*	*< 0.012*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-12	*NC*	*NC*	*< 0.027*	*< 0.027*	*< 0.027*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-13	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-14	*NC*	*< 0.011*	*< 0.0072*	*< 0.0072*	*< 0.0072*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-15	*NC*	*< 0.0025*	*< 0.0022*	*< 0.0022*	*< 0.0022*	*< 0.0079*	*< 0.0052*	*< 0.0052*	*NC*	*NC*	*NC*
22-16	*NC*	*< 0.0064*	*< 0.0048*	*< 0.0048*	*< 0.0048*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-17	*NC*	*NC*	*< 0.012*	*< 0.012*	*< 0.012*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-18	*NC*	*NC*	*< 0.019*	*< 0.019*	*< 0.019*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-19	*NC*	*< 0.018*	*< 0.0098*	*< 0.0098*	*< 0.0098*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-20	*NC*	*NC*	*< 0.043*	*< 0.043*	*< 0.043*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-21	*NC*	*NC*	*< 0.015*	*< 0.015*	*< 0.015*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-22	*NC*	*NC*	*< 0.015*	*< 0.015*	*< 0.015*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-23	*NC*	*< 0.0076*	*< 0.0061*	*< 0.0061*	*< 0.0061*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-24	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-25	*NC*	*NC*	*< 0.017*	*< 0.017*	*< 0.017*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)						
	201	**202**	**203**	**205**	**206**	**207**	**208**
Homolog	**Octa**	**Octa**	**Octa**	**Octa**	**Nona**	**Nona**	**Nona**
K_{fs} (L/L_{PDMS}) [1]	**31,226,788**	**41,164,924**	**31,226,788**	**37,542,856**	**84,047,986**	**113,377,614**	**113,377,614**
S (ng/L) [2]	**81**	**81**	**81**	**81**	**18**	**18**	**18**
22-4	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-5	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-6	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-7	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-8	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-9	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-10	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-11	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-12	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-13	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-14	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-15	*< 0.0052*	*NC*	*< 0.0052*	*< 0.0079*	*NC*	*NC*	*NC*
22-16	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-17	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-18	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-19	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-20	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-21	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-22	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-23	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-24	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
22-25	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*

Notes:

1 K_{fs} (L/L_{PDMS}) is the Fiber PDMS-Solution Water Partition Coefficient (**Table 4**)
2 Approximate solubility limit (S) from **Table 4**.
3 Concentrations of freely dissolved PCBs in sediment porewater are calculated by adjusting the concentration of PCBs in PDMS to reflect concentrations at steady state using model-predicted CFs (**Table 6**), according to the following equation:

$$[PCB\ Congeners_{Sediment\ Porewater}] = \frac{CF \times [PCB\ Congeners_{PDMS}] \times 1{,}000{,}000 \mu L/L}{K_{fs}}$$

4 Concentrations for samples with relationships that are not strong (**Table 7**) and/or negative $Log_{10}CF$ values (**Table 8**) are calculated for demonstration purposes only.
5 NC = Not Calculated.
6 NC results were not calculated because conditions were insufficient to reach 1% of steady state, as described in **Table 8**. PCB-54, 75 105/132/153, 146, 149, 187 and 206 were not calculated for reasons detailed in **Table 5**.
7 PCB congener properties of the less chlorinated congener were used in calculations.
8 Abbreviations:
µL = microliter ng = nanogram PDMS = polydimethylsiloxane
L = liter PCB = polychlorobiphenyl

Table 10. Concentrations of Freely-dissolved PCB Homologs in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Sample ID	Station ID	Deployment Type	Concentration of PCB Homologs in Sediment Porewater [1] (ng $_{PCB}$/L $_{Porewater}$)									
				Mono	Di	Tri	Tetra	Penta	Hexa	Hepta	Octa	Nona	Total Tetra-Hexa PCBs [2]
22-12	B22-1-MM-SR	1-MM	SEA Ring	< 0.62	< 0.12	< 0.097	**0.0067**	< 0.011	< 0.011	< 0.031	NC	NC	**0.0067**
22-11	B22-1R-MM-SR	1R-MM	SEA Ring	< 1.2	< 0.22	< 0.18	**0.0081**	< 0.018	**0.012**	< 0.017	NC	NC	**0.02**
22-9	B22-2-MM-SR	2-MM	SEA Ring	< 1	< 0.2	< 0.16	**0.055**	< 0.017	< 0.011	< 0.03	NC	NC	**0.055**
22-10	B22-3-MM-SR	3-MM	SEA Ring	< 0.9	< 0.17	< 0.14	**0.01**	< 0.016	< 0.013	< 0.034	NC	NC	**0.01**
22-8	B22-4-MM-SR	4-MM	SEA Ring	< 0.69	< 0.14	< 0.11	< 0.037	< 0.033	**0.084**	NC	NC	NC	**0.1**
22-7	B22-5-MM-SR	5-MM	SEA Ring	< 0.65	< 0.12	< 0.1	**0.016**	< 0.013	< 0.02	< 0.04	NC	NC	**0.016**
22-6	B22-6-MM-SR	6-MM	SEA Ring	< 0.56	< 0.11	< 0.088	**0.076**	**0.024**	**0.041**	NC	NC	NC	**0.14**
22-5	B22-7-MM-SR	7-MM	SEA Ring	< 0.49	< 0.092	< 0.076	< 0.021	< 0.0076	< 0.0038	< 0.0071	NC	NC	< 0.0038
22-4	B22-8-MM-SR	8-MM	SEA Ring	< 0.47	< 0.089	< 0.072	< 0.021	< 0.0079	**0.014**	< 0.022	NC	NC	**0.014**
22-13	B22-9-MM-SR	9-MM	SEA Ring	< 0.6	< 0.12	< 0.095	**0.0046**	< 0.013	**0.016**	NC	NC	NC	**0.021**
22-20	B22-1-MM-Core	1-MM	Core	< 0.7	< 0.13	< 0.11	**0.035**	< 0.013	**0.0094**	< 0.043	NC	NC	**0.044**
22-14	B22-1R-MM-Core	1R-MM	Core	< 0.48	< 0.091	< 0.075	**0.014**	< 0.0077	**0.011**	< 0.011	NC	NC	**0.025**
22-23	B22-2-MM-Core	2-MM	Core	< 0.89	< 0.17	< 0.14	**0.036**	< 0.013	**0.0066**	< 0.0076	NC	NC	**0.043**
22-15	B22-3-MM-Core	3-MM	Core	< 0.51	< 0.095	< 0.078	**0.013**	**0.0092**	**0.0053**	**0.00043**	< 0.0079	NC	**0.027**
22-18	B22-4-MM-Core	4-MM	Core	< 0.53	< 0.1	< 0.082	**0.0042**	< 0.0092	< 0.0082	**0.0053**	NC	NC	**0.0042**
22-22	B22-5-MM-Core	5-MM	Core	< 0.24	< 0.045	< 0.037	**0.0058**	< 0.0042	**0.0081**	< 0.018	NC	NC	**0.014**
22-19	B22-6-MM-Core	6-MM	Core	< 0.33	< 0.063	< 0.052	**0.0065**	< 0.0057	**0.0052**	< 0.018	NC	NC	**0.012**
22-24	B22-7-MM-Core	7-MM	Core	< 0.35	< 0.068	< 0.055	**0.015**	< 0.007	**0.0089**	< 0.025	NC	NC	**0.024**
22-17	B22-8-MM-Core	8-MM	Core	< 0.3	< 0.057	< 0.047	**0.0057**	< 0.0053	**0.0056**	< 0.014	NC	NC	**0.011**
22-25	B22-9-MM-Core	9-MM	Core	< 0.57	< 0.11	< 0.088	**0.034**	< 0.0097	**0.014**	< 0.019	NC	NC	**0.048**
22-21	B22-9-DUP-MM-Core	9-DUP-MM	Core	< 0.65	< 0.12	< 0.1	**0.026**	< 0.011	**0.014**	**0.0033**	NC	NC	**0.04**
22-16	B22-10-MM-Core	10-MM	Core	< 0.52	< 0.098	< 0.08	**0.0041**	**0.0015**	**0.008**	**0.00088**	NC	NC	**0.014**
Average Method Detection Limit for Non-Detect Results				0.37	0.09	0.05	0.02	0.01	0.01	0.01	-	-	-

Notes:

1 The concentration of PCB Homologs in each sample were calculated as the sum of the detected PCB congeners (**Table 9**). If no congeners were detected, the maximum detection limit for the congeners within the homolog group is reported.

2 Total Tetra-Hexa PCBs was calculated as the sum of the detected PCB homologs. If concentrations were non-detect for all homologs, Total Tetra-Hexa PCBs were assumed to be equal to the highest homolog detection limit.

3 All stations are located within the target amendment area.

4 NC results were not calculated because conditions were insufficient to reach 1% of steady state, as described in **Table 8**.

5 Concentrations of PCB-146, 149, and 187 may have been detected erroneously and were not included in these calculations (**Table 5**).

6 Abbreviations:

L = liter; ng = nanogram
NC = Not Calculated; PCB = polychlorobiphenyl

Table 1. SPME Fiber Measurements for the 33-Month Event
33-Month Monitoring Event
Puget Sound Naval Shipyard and Intermediate Facility
Bremerton, Washington

Hexane Extract Vial Number	Sample ID	Station ID	Sample Type	Empty Vial Weight (g)	Vial Weight with Fiber (g)	Total Fiber Length (cm)	Percent Recovery	Notes
33-1	Trip Blank 1	Trip Blank 1	Trip Blank	2.4461	2.613	200.12	100%	Did not submit for analysis due to size of the vial (too small and hexane overflowed).
33-2	Trip Blank 2	Trip Blank 2	Trip Blank	2.2512	2.4173	199.16	100%	-
33-3	Trip Blank 3	Trip Blank 3	Trip Blank	2.2297	2.3957	199.04	100%	-
33-4	Trip Blank 4	Trip Blank 4	Trip Blank	2.2241	2.3892	197.96	99%	-
33-5	B33-1-MM-SeaRing	Station1	SeaRing	2.2578	2.4188	193.05	97%	-
33-6	B33-2-MM-SeaRing	Station 2	SeaRing	2.2277	2.3905	195.2	98%	-
33-7	B33-3-MM-SeaRing	Station 3	SeaRing	2.2557	2.4227	200.24	100%	-
33-8	B33-4-MM-SeaRing	Station 4	SeaRing	2.2402	2.3889	178.3	89%	-
33-9	B33-5-MM-Searing	Station 5	SeaRing	2.2135	2.3797	199.28	100%	-
33-10	B33-6-MM-SeaRing	Station 6	SeaRing	2.2185	2.3807	194.48	97%	-
33-11	B33-6DUP-SeaRing	Station 6	SeaRing	2.2581	2.31	62.23	31%	SPME envelope severely bent; bent during capping
33-12	B33-7-MM-SeaRing	Station 7	SeaRing	2.2474	2.4125	197.96	99%	-
33-13	B33-8-MM-SeaRing	Station 8	SeaRing	2.2585	2.4237	198.08	99%	-
33-14	B33-9-MM-SeaRing	Station 9	SeaRing	2.2577	2.4212	196.04	98%	-
33-15	B33-10-MM-SeaRing	Station 10	SeaRing	2.2627	2.4202	188.85	94%	-
33-16	B33-1-MM-Core	Station 1	Core	2.253	2.5734	384.17	96%	Weighed with 1.8 ml hexane. Weight of hexane accounted for by measurement in other vial.
33-17	B33-5-MM-Core	Station 5	Core	2.2566	2.5776	384.89	96%	-
33-18	B33-9-MM-Core	Station 9	Core	2.2536	2.5729	382.85	96%	-
33-19	B33-10-MM-Core	Station 10	Core	2.2524	2.5798	392.57	98%	-
33-20	B33-3-MM-Core	Station 3	Core	2.2649	2.5936	394.12	99%	-
33-21	B33-6B-MM-Core	Station 6	Core	2.2632	2.5958	398.8	100%	Duplicate - paired with a Searing
33-22	B33-7-MM-Core	Station 7	Core	2.2539	2.5847	396.64	99%	-
33-23	B33-6A-MM-Core	Station 6	Core	2.2609	2.5764	378.3	95%	Paired with Searing
33-24	B33-4-MM-Core	Station 4	Core	2.2578	2.5826	389.45	97%	0.2 mL of additional hexane added
33-25	B33-2-MM-Core	Station 2	Core	2.2688	2.5909	386.21	97%	-
33-26	B33-8-MM-Core	Station 8	Core	2.2443	2.5724	393.41	98%	-

Notes:
[1] Samples were processed on August 6, 2015 at Space and Naval Warfare Systems Center Pacific (SSC Pacific) in Point Loma by Melissa Grover (Ramboll Environ) and Victoria Kirtay (SSC Pacific).
[2] Each envelope contained 16 fibers at 12.5 cm in length for a total length of 200 cm per envelope. The core samples had two envelopes.
[3] Abbreviations:
cm = centimeter
NA = not applicable
SEA Ring = Sediment Ecotoxicity Assessment Ring
SPME = solid phase microextraction

Table 2. SPME Envelope Sediment Contact Measurements.
SPAWAR Systems Center Pacific
San Diego, California

Sample ID	Depth of Sediment in Core (cm)	Length of Envelope Below Sediment Surface (cm)	Length of Envelope Above Sediment Surface [1] (cm)	Percent of Envelope Below Sediment Surface	Sample Notes
B33-1-MM-Core	14	13.0	2.5	93%	
B33-1-MM-SeaRing	3	3	12	18%	
B33-2-MM-Core	29	14.0	0.0	100%	
B33-2-MM-SeaRing	13	13	1	91%	
B33-3-MM-Core	5	5.0	9.5	36%	
B33-3-MM-SeaRing	9	9	5	64%	
B33-4-MM-Core	6.4	6.4	7.6	46%	
B33-4-MM-SeaRing	3	3	12	18%	
B33-5-MM-Core	8	7.8	7.6	56%	
B33-5-MM-Searing	10	10	4	73%	
B33-6A-MM-Core	9	9.0	6.0	64%	
B33-6B-MM-Core	17	14.0	0.0	100%	
B33-6DUP-SeaRing	5	5.0	9.0	36%	
B33-6-MM-SeaRing	3	3	12	18%	
B33-7-MM-Core	8.25	8.3	5.5	59%	
B33-7-MM-SeaRing	7.6	7.6	6	54%	
B33-8-MM-Core	16	14.0	0.0	100%	
B33-8-MM-SeaRing	12.7	12.7	1	91%	
B33-9-MM-Core	16	14.0	0.0	100%	
B33-9-MM-SeaRing	10	10.0	4.0	71%	Likely washed out
B33-10-MM-Core	10.0	8.0	7.5	57%	
B33-10-MM-SeaRing	5	5.0	9.0	36%	
Trip Blank 1	NA	NA	NA	NA	NA
Trip Blank 2	NA	NA	NA	NA	NA
Trip Blank 3	NA	NA	NA	NA	NA
Trip Blank 4	NA	NA	NA	NA	NA

Notes:

1 Length of envelope above the sediment surface for the core samples is the average for the two envelopes.

2 Depth of sediment in core was measured in the field upon retrieval. For the SPME samples in SEA Ring chambers, depth of sediment was measured by associates from

3 Length of envelope below sediment surface was not measured. It is assumed to be equal to the depth of sediment. If the depth of sediment exceeds 14 cm, the length of envelope below the sediment surface is assumed to be 14 cm.

4 For the SPME samples in the SEA Ring chambers, length of envelope above the sediment surface was estimated based on the assumed envelope length of 14 cm. For the SPME samplers deployed outside of the SEA Ring in core liners, the length of envelope above the sediment surface was measured in the field.

5 Percent of envelope below sediment surface is calculated as the length of envelope below sediment surface divided by the assumed length of envelope (14 cm).

6 For the SPME samplers deployed outside of the SEA Ring in core liners, the sediment was discarded.

Table 3. Details for 22-Month SPME Sampling Event.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Station ID	Hexane Extract Vial Number	Sample ID	Sample Type	Retrieval Date	Retrieval Time
33-1	Trip Blank 1	33-1	Trip Blank 1	Trip Blank	NA	NA
33-2	Trip Blank 2	33-2	Trip Blank 2	Trip Blank	NA	NA
33-3	Trip Blank 3	33-3	Trip Blank 3	Trip Blank	NA	NA
33-4	Trip Blank 4	33-4	Trip Blank 4	Trip Blank	NA	NA
33-5	1-MM	33-5	B33-1-MM-SeaRing	SEA Ring	7/21/2015	9:26
33-6	2-MM	33-6	B33-2-MM-SeaRing	SEA Ring	7/21/2015	10:14
33-7	3-MM	33-7	B33-3-MM-SeaRing	SEA Ring	7/21/2015	9:47
33-8	4-MM	33-8	B33-4-MM-SeaRing	SEA Ring	7/21/2015	10:55
33-9	5-MM	33-9	B33-5-MM-Searing	SEA Ring	7/21/2015	13:28
33-10	6-MM	33-10	B33-6-MM-SeaRing	SEA Ring	7/21/2015	13:05
33-11	6DUP	33-11	B33-6DUP-SeaRing	SEA Ring	7/21/2015	13:05
33-12	7-MM	33-12	B33-7-MM-SeaRing	SEA Ring	7/21/2015	14:46
33-13	8-MM	33-13	B33-8-MM-SeaRing	SEA Ring	7/22/2015	9:25
33-14	9-MM	33-14	B33-9-MM-SeaRing	SEA Ring	7/22/2015	10:22
33-15	10-MM	33-15	B33-10-MM-SeaRing	SEA Ring	7/22/2015	13:34
33-16	1-MM	33-16	B33-1-MM-Core	Core	7/21/2015	9:26
33-17	5-MM	33-17	B33-5-MM-Core	Core	7/21/2015	13:28
33-18	9-MM	33-18	B33-9-MM-Core	Core	7/22/2015	10:22
33-19	10-MM	33-19	B33-10-MM-Core	Core	7/22/2015	13:34
33-20	3-MM	33-20	B33-3-MM-Core	Core	7/21/2015	9:47
33-21	6B-MM	33-21	B33-6B-MM-Core	Core	7/21/2015	12:31
33-22	7-MM	33-22	B33-7-MM-Core	Core	7/21/2015	14:46
33-23	6A-MM	33-23	B33-6A-MM-Core	Core	7/21/2015	12:31
33-24	4-MM	33-24	B33-4-MM-Core	Core	7/21/2015	10:55
33-25	2-MM	33-25	B33-2-MM-Core	Core	7/21/2015	10:14
33-26	8-MM	33-26	B33-8-MM-Core	Core	7/22/2015	9:25

Notes:
[1] Abbreviations:
cm = centimeter
SEA Ring = Sediment Ecotoxicity Assessment Ring
SPME = solid phase microextraction

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-1	2051-60-7	Mono	4.23	16,982	16,388	2.48	2,480,000	Planar	
PCB-3	2051-62-9	Mono	4.87	74,131	71,536	2.48	2,480,000	Planar	
PCB-4	13029-08-8	Di	4.64	43,652	42,124	0.59619	596,190	Non-planar	
PCB-5	16605-91-7	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-6	25569-80-6	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-7	33284-50-3	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-8	34883-43-7	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-9	34883-39-1	Di	4.96	91,201	88,009	0.59619	596,190	Planar	
PCB-10	33146-45-1	Di	4.64	43,652	42,124	0.59619	596,190	Non-planar	
PCB-12	2974-92-7	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-13	2974-90-5	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-14	34883-41-5	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-15	2050-68-2	Di	5.28	190,546	183,877	0.59619	596,190	Planar	
PCB-16	38444-78-9	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-17	37680-66-3	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-18	37680-65-2	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-19	38444-73-4	Tri	5.05	112,202	108,275	0.13991	139,910	Non-planar	
PCB-20	38444-84-7	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-22	38444-85-8	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-24	55702-45-9	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-25	55712-37-3	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-26	38444-81-4	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-27	38444-76-7	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-28	7012-37-5	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-29	15862-07-4	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	Performance Reference Compound [5]
PCB-31	16606-02-3	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-32	38444-77-8	Tri	5.27	186,209	179,691	0.13991	139,910	Non-planar	
PCB-33	38444-86-9	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-34	37680-68-5	Tri	5.48	301,995	291,425	0.13991	139,910	Planar	
PCB-35	37680-69-6	Tri	5.69	489,779	472,637	0.13991	139,910	Planar	
PCB-37	38444-90-5	Tri	5.69	489,779	472,637	0.13991	139,910	Planar	
PCB-40	38444-93-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-41	52663-59-9	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-42	36559-22-5	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-44	41464-39-5	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-45	70362-45-7	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-46	41464-47-5	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-47	2437-79-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-48	70362-47-9	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-49	41464-40-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-51	68194-04-7	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-52	35693-99-3	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-53	41464-41-9	Tetra	5.62	416,869	402,279	0.032245	32,245	Non-planar	
PCB-54	15968-05-5	Tetra	5.66	457,088	441,090	0.032245	32,245	Non-planar	
PCB-56	41464-43-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-59	74472-33-6	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-60	33025-41-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-63	74472-34-7	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-64	52663-58-8	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-66	32598-10-0	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-67	73575-53-8	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-69	60233-24-1	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	Performance Reference Compound [5]
PCB-70	32598-11-1	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-71	41464-46-4	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-73	74338-23-1	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-74	32690-93-0	Tetra	5.94	870,964	840,480	0.032245	32,245	Planar	
PCB-75	32598-12-2	Tetra	5.78	602,560	581,470	0.032245	32,245	Non-planar	
PCB-77	32598-13-3	Tetra	6.10	1,258,925	1,214,863	0.032245	32,245	Planar	
PCB-81	70362-50-4	Tetra	6.10	1,258,925	1,214,863	0.032245	32,245	Planar	
PCB-82	52663-62-4	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-83	60145-20-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-84	52663-60-2	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-85	65510-45-4	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-87	38380-02-8	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-90/101	68194-07-0/ 37680-73-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-91	68194-05-8	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-92	52663-61-3	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-93	73575-56-1	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-95	38379-99-6	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-97	41464-51-1	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-99	38380-01-7	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg $_{PDMS}$)	K_{fs} [2] (L/kg $_{PDMS}$)	K_{fs} [3] (L/L $_{PDMS}$)	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-100	39485-83-1	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-101	37680-73-2	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-103	60145-21-3	Penta	6.13	1,348,963	1,301,749	0.0073282	7,328	Non-planar	
PCB-104	56558-16-8	Penta	6.20	1,584,893	1,529,422	0.0073282	7,328	Non-planar	Performance Reference Compound [5]
PCB-105	32598-14-4	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-107	70424-68-9	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-110	38380-03-9	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-114	74472-37-0	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-115	74472-38-1	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-117	68194-11-6	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-118	31508-00-6	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-119	56558-17-9	Penta	6.26	1,819,701	1,756,011	0.0073282	7,328	Non-planar	
PCB-122	76842-07-4	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-123	65510-44-3	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-124	70424-70-3	Penta	6.39	2,454,709	2,368,794	0.0073282	7,328	Planar	
PCB-126	57465-28-8	Penta	6.52	3,311,311	3,195,415	0.0073282	7,328	Planar	
PCB-128	38380-07-3	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-129	55215-18-4	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-130	52663-66-8	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-131	61798-70-7	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-132	38380-05-1	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-134	52704-70-8	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-135	52744-13-5	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-136	38411-22-2	Hexa	6.70	5,011,872	4,836,457	0.0016469	1,647	Non-planar	
PCB-137	35694-06-5	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-138	35065-28-2	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-141	52712-04-6	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-144	68194-14-9	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-146	51908-16-8	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-147	68194-13-8	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-149	38380-04-0	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-151	52663-63-5	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	
PCB-153	35065-27-1	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-154	60145-22-4	Hexa	6.61	4,073,803	3,931,220	0.0016469	1,647	Non-planar	Performance Reference Compound [5]
PCB-156	38380-08-4	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-157	69782-90-7	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg_{PDMS})	K_{fs} [2] (L/kg_{PDMS})	K_{fs} [3] (L/L_{PDMS})	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-158	74472-42-7	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-163	74472-44-9	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-164	74472-45-0	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-165	74472-46-1	Hexa	6.71	5,128,614	4,949,112	0.0016469	1,647	Non-planar	
PCB-167	52663-72-6	Hexa	6.82	6,606,934	6,375,692	0.0016469	1,647	Planar	
PCB-169	32774-16-6	Hexa	6.93	8,511,380	8,213,482	0.0016469	1,647	Planar	
PCB-170	35065-30-6	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-171	52663-71-5	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-172	52663-74-8	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-173	68194-16-1	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-174	38411-25-5	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-175	40186-70-7	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-176	52663-65-7	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-177	52663-70-4	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-178	52663-67-9	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-179	52663-64-6	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-180	35065-29-3	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-183	52663-69-1	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-184	74472-48-3	Hepta	7.17	14,791,084	14,273,396	0.00036674	367	Non-planar	
PCB-185	52712-05-7	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-187	52663-68-0	Hepta	7.06	11,481,536	11,079,682	0.00036674	367	Non-planar	
PCB-189	39635-31-9	Hepta	7.25	17,782,794	17,160,396	0.00036674	367	Planar	
PCB-190	41411-64-7	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-191	74472-50-7	Hepta	7.15	14,125,375	13,630,987	0.00036674	367	Non-planar	
PCB-193	69782-91-8	Hepta	7.15	14,125,375	13,630,987	0.000366740	367	Non-planar	
PCB-194	35694-08-7	Octa	7.59	38,904,514	37,542,856	0.000081049	81	Non-planar	
PCB-195	52663-78-2	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-196	42740-50-1	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-197	33091-17-7	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-199	52663-75-9	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-200	52663-73-7	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-201	40186-71-8	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-202	2136-99-4	Octa	7.63	42,657,952	41,164,924	0.000081049	81	Non-planar	
PCB-203	52663-76-0	Octa	7.51	32,359,366	31,226,788	0.000081049	81	Non-planar	
PCB-205	74472-53-0	Octa	7.59	38,904,514	37,542,856	0.000081049	81	Non-planar	

Table 4. Literature-derived Information on PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

PCB Congener	CAS Number	Homolog Group	Log K_{fs} [1] (L/kg_{PDMS})	K_{fs} [2] (L/kg_{PDMS})	K_{fs} [3] (L/L_{PDMS})	S [4] (mg/L)	S [4] (ng/L)	Planarity	Notes
PCB-206	40186-72-9	Nona	7.94	87,096,359	84,047,986	0.000017797	18	Non-planar	
PCB-207	52663-79-3	Nona	8.07	117,489,755	113,377,614	0.000017797	18	Non-planar	
PCB-208	52663-77-1	Nona	8.07	117,489,755	113,377,614	0.000017797	18	Non-planar	
PCB-209	2051-24-3	Deca	8.51	323,593,657	312,267,879	0.0000038862	4	Non-planar	Spike Recovery Standard [6]

Notes:
1 Log K_{fs} = Log_{10} Fiber PDMS-Solution Partition Coefficient. Referenced from Smedes et al. 2009.
2 K_{fs} = Fiber PDMS-Solution Water Partition Coefficient
3 Converted L with the density of PDMS = 0.965 kg/L
4 S = Solubility Limit in Water. Predicted using EpiWin.
5 All SPMEs were loaded with Performance Reference Compounds (24-h tumble in 900 mL 80:20 methanol:MQ water solution (0.2 µg/mL)) prior to deployment.
6 Spike recovery standard added to 1.8-mL extracts prior to pre-concentration; used to correct for PCB loss during pre-concentration step.
7 PCB = polychlorobiphenyl
8 SPME = solid phase microextraction
9 PDMS = polydimethylsiloxane
10 L = liter
11 kg = kilogram
12 ng = nanogram
13 mg = milligram

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Sample ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																							
		1	3	4	5	6	7	8	9	10	12	13	14	15	16	17	18	19	20	22	24	25	26	27	28
33-2	Trip Blank 2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-3	Trip Blank 3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-4	Trip Blank 4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-5	B33-1-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-6	B33-2-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-7	B33-3-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-8	B33-4-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-9	B33-5-MM-Searing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-10	B33-6-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-11 [5]	B33-6DUP-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-12	B33-7-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-13	B33-8-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-14	B33-9-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-15	B33-10-MM-SeaRing	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-16	B33-1-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-17	B33-5-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-18	B33-9-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-19	B33-10-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-20	B33-3-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-21	B33-6B-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-22	B33-7-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-23	B33-6A-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-24	B33-4-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-25	B33-2-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-26	B33-8-MM-Core	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																									
Vial ID	**29**	**31**	**32**	**33**	**34**	**35**	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**
33-2	**37.80**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-3	**41.30**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-4	**37.90**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-5	**9.50**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-6	**7.01**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-7	**13.80**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-8	**6.35**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-9	**10.80**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-10	**2.85**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-11 [5]	**0.80**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-12	**18.00**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-13	**6.13**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-14	**12.90**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND	**0.06**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-15	**20.20**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND	**0.03**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-16	**24.40**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.06**	ND	ND	ND	ND	**0.38**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-17	**17.30**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-18	**9.97**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.11**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-19	**30.50**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.12**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-20	**27.00**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.18**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-21	**27.70**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.32**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-22	**21.90**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.20**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-23	**1.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-24	**14.10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.07**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-25	**18.20**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.10**	ND	ND	ND	ND	**0.31**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-26	**6.91**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.21**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																								
	67	69	70	71	73	74	75	77	81	82	83	84	85	87/115	90/101	91	92	93	95	97	99	100	103	104	105	107
33-2	*ND*	**39.90**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**29.80**	*ND*	*ND*
33-3	*ND*	**43.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**33.20**	*ND*	*ND*
33-4	*ND*	**39.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**30.40**	*ND*	*ND*
33-5	*ND*	**19.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**18.80**	*ND*	*ND*
33-6	*ND*	**19.30**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**19.30**	*ND*	*ND*
33-7	*ND*	**20.60**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**16.60**	*ND*	*ND*
33-8	*ND*	**15.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**16.70**	*ND*	*ND*
33-9	*ND*	**21.90**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**20.90**	*ND*	*ND*
33-10	*ND*	**9.05**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**14.70**	*ND*	*ND*
33-11 [5]	*ND*	**5.34**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**8.41**	*ND*	*ND*
33-12	*ND*	**22.30**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**18.50**	*ND*	*ND*
33-13	*ND*	**18.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**22.00**	*ND*	*ND*
33-14	*ND*	**22.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**19.90**	*ND*	*ND*
33-15	*ND*	**26.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**21.80**	*ND*	*ND*
33-16	*ND*	**35.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**29.00**	*ND*	*ND*
33-17	*ND*	**23.70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**19.70**	*ND*	*ND*
33-18	*ND*	**20.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**22.60**	*ND*	*ND*
33-19	*ND*	**39.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**28.10**	*ND*	*ND*
33-20	*ND*	**36.80**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**27.80**	*ND*	*ND*
33-21	*ND*	**37.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**27.60**	*ND*	*ND*
33-22	*ND*	**30.70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**23.40**	*ND*	*ND*
33-23	*ND*	**7.69**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**17.50**	*ND*	*ND*
33-24	*ND*	**22.70**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**18.20**	*ND*	*ND*
33-25	*ND*	**31.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**25.80**	*ND*	*ND*
33-26	*ND*	**16.10**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**19.90**	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																										
	110	114	117	118	119	122	123	124	126	128	129	130	131	132	134	135	136	137	138/163/164	141	144	146	147	149	151	153	154	156
33-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	ND	0.06	ND	0.10	48.90	ND
33-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19	ND	0.06	ND	0.12	50.50	ND
33-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	ND	0.06	ND	0.12	46.60	ND
33-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	0.04	ND	0.09	32.80	ND
33-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13	ND	0.06	ND	0.11	36.20	ND
33-7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.08	ND	0.22	ND	0.07	29.90	ND
33-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.09	ND	0.07	ND	0.10	33.00	ND
33-9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.10	ND	0.05	ND	0.08	34.80	ND
33-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.09	ND	0.04	ND	0.07	30.50	ND
33-11 [5]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04	ND	0.03	ND	ND	16.70	ND
33-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.10	ND	0.05	ND	0.08	31.90	ND
33-13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12	ND	0.05	ND	0.52	38.20	ND
33-14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.09	ND	0.04	ND	0.07	34.00	ND
33-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13	ND	0.08	ND	0.10	35.80	ND
33-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	ND	0.12	ND	0.17	46.60	ND
33-17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.10	ND	0.06	ND	0.13	32.60	ND
33-18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12	ND	0.09	ND	0.11	48.80	ND
33-19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14	ND	0.13	ND	0.14	58.00	ND
33-20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13	ND	0.09	ND	0.11	53.00	ND
33-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13	ND	0.09	ND	0.19	50.60	ND
33-22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	0.10	ND	0.12	42.10	ND
33-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	0.06	ND	0.10	40.40	ND
33-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.09	ND	0.05	ND	0.10	33.70	ND
33-25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13	ND	0.21	ND	0.12	45.70	ND
33-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.10	ND	0.06	ND	0.08	40.30	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)																							
Vial ID	**157**	**158**	**165**	**167**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183**	**184**	**185**	**187**	**189**	**190**	**191**	**193**
33-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.06**	ND	ND	**0.36**	ND	ND	ND	ND
33-3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.08**	ND	ND	**0.39**	ND	ND	ND	ND
33-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.05**	ND	ND	**0.36**	ND	ND	ND	ND
33-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.27**	ND	ND	ND	ND
33-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.29**	ND	ND	ND	ND
33-9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.25**	ND	ND	ND	ND
33-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.02**	ND	ND	**0.24**	ND	ND	ND	ND
33-11 [5]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.11**	ND	ND	ND	ND
33-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.02**	ND	ND	**0.02**	ND	ND	ND	ND
33-13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND	**0.33**	ND	ND	ND	ND
33-14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.03**	ND	ND	**0.26**	ND	ND	ND	ND
33-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.03**	ND	ND	**0.28**	ND	ND	ND	ND
33-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND	**0.39**	ND	ND	ND	ND
33-17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.02**	ND	ND	**0.26**	ND	ND	ND	ND
33-18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND	**0.32**	ND	ND	ND	ND
33-19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.23**	ND	ND	**0.30**	ND	ND	ND	ND
33-20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.05**	ND	ND	**0.26**	ND	ND	ND	ND
33-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND	**0.24**	ND	ND	ND	ND
33-22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND	**0.19**	ND	ND	ND	ND
33-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.03**	ND	ND	**0.22**	ND	ND	ND	ND
33-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.03**	ND	ND	**0.16**	ND	ND	ND	ND
33-25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.03**	ND	ND	**0.23**	ND	ND	ND	ND
33-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.03**	ND	ND	**0.22**	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Uncorrected [1] (ng)												
	194	195	196	197	199	200	201	202	203	205	206	207	208
33-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-11 [5]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Internal Spike Standard Recovery (%)	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																							
Vial ID	**209**	**1**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**
33-2	**90.3**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-3	**91.8**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-4	**84.3**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-5	**81.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-6	**85.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-7	**73.3**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-8	**104.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-9	**84.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-10	**84.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-11 [5]	**86.3**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-12	**62.3**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-13	**90.8**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-14	**83.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-15	**89.8**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-16	**80.8**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-17	**63.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-18	**78.8**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-19	**80.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-20	**79.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-21	**91.0**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-22	**85.3**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-23	**86.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-24	**83.3**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-25	**87.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-26	**87.5**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																									
Vial ID	**29**	**31**	**32**	**33**	**34**	**35**	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**
33-2	**41.88**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-3	**45.01**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-4	**44.99**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-5	**11.66**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.04**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-6	**8.20**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.06**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-7	**18.84**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-8	**6.11**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-9	**12.78**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-10	**3.37**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-11 [5]	**0.93**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-12	**28.92**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-13	**6.75**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.11**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-14	**15.54**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.12**	ND	ND	ND	ND	**0.07**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-15	**22.51**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.11**	ND	ND	ND	ND	**0.04**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-16	**30.22**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.07**	ND	ND	ND	ND	**0.47**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-17	**27.24**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.20**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-18	**12.66**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.13**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-19	**38.13**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-20	**33.96**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.23**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-21	**30.44**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.35**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-22	**25.69**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.24**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-23	**1.21**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.12**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-24	**16.94**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.08**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-25	**20.80**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.11**	ND	ND	ND	ND	**0.35**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33-26	**7.90**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.24**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																									
Vial ID	**67**	**69**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**	**87/115**	**90/101**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**103**	**104**	**105**	**107**
33-2	ND	**44.21**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**33.02**	ND	ND
33-3	ND	**46.98**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**36.19**	ND	ND
33-4	ND	**46.53**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**36.08**	ND	ND
33-5	ND	**23.80**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**23.07**	ND	ND
33-6	ND	**22.57**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**22.57**	ND	ND
33-7	ND	**28.12**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**22.66**	ND	ND
33-8	ND	**14.81**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	**16.06**	ND	ND
33-9	ND	**25.92**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**24.73**	ND	ND
33-10	ND	**10.71**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**17.40**	ND	ND
33-11 [5]	ND	**6.19**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.75**	ND	ND
33-12	ND	**35.82**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**29.72**	ND	ND
33-13	ND	**19.94**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**24.24**	ND	ND
33-14	ND	**26.75**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**23.98**	ND	ND
33-15	ND	**29.42**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**24.29**	ND	ND
33-16	ND	**43.84**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**35.91**	ND	ND
33-17	ND	**37.32**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**31.02**	ND	ND
33-18	ND	**26.41**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**28.70**	ND	ND
33-19	ND	**49.25**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**35.13**	ND	ND
33-20	ND	**46.29**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**34.97**	ND	ND
33-21	ND	**41.10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**30.33**	ND	ND
33-22	ND	**36.01**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**27.45**	ND	ND
33-23	ND	**8.89**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**20.23**	ND	ND
33-24	ND	**27.27**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**21.86**	ND	ND
33-25	ND	**35.66**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**29.49**	ND	ND
33-26	ND	**18.40**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**22.74**	ND	ND

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																										
	110	114	117	118	119	122	123	124	126	128	129	130	131	132	134	135	136	137	138/163/164	141	144	146 [4]	147	149 [4]	151	153 [4]	154	156
33-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.17**	*ND*	**0.06**	*ND*	**0.11**	**54.18**	*ND*
33-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.20**	*ND*	**0.07**	*ND*	**0.13**	**55.04**	*ND*
33-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.20**	*ND*	**0.07**	*ND*	**0.15**	**55.31**	*ND*
33-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.14**	*ND*	**0.05**	*ND*	**0.10**	**40.25**	*ND*
33-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	**0.07**	*ND*	**0.13**	**42.34**	*ND*
33-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	**0.30**	*ND*	**0.10**	**40.82**	*ND*
33-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.09**	*ND*	**0.06**	*ND*	**0.09**	**31.73**	*ND*
33-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	**0.06**	*ND*	**0.09**	**41.18**	*ND*
33-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	**0.04**	*ND*	**0.08**	**36.09**	*ND*
33-11 [5]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	**0.04**	*ND*	*ND*	**19.36**	*ND*
33-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	**0.08**	*ND*	**0.13**	**51.24**	*ND*
33-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.14**	*ND*	**0.06**	*ND*	**0.57**	**42.09**	*ND*
33-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	**0.05**	*ND*	**0.09**	**40.96**	*ND*
33-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.14**	*ND*	**0.08**	*ND*	**0.11**	**39.89**	*ND*
33-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.19**	*ND*	**0.15**	*ND*	**0.20**	**57.71**	*ND*
33-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	**0.09**	*ND*	**0.21**	**51.34**	*ND*
33-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.16**	*ND*	**0.11**	*ND*	**0.14**	**61.97**	*ND*
33-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.18**	*ND*	**0.16**	*ND*	**0.18**	**72.50**	*ND*
33-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.17**	*ND*	**0.11**	*ND*	**0.14**	**66.67**	*ND*
33-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	**0.09**	*ND*	**0.21**	**55.60**	*ND*
33-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	**0.11**	*ND*	**0.14**	**49.38**	*ND*
33-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	**0.07**	*ND*	**0.11**	**46.71**	*ND*
33-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.11**	*ND*	**0.06**	*ND*	**0.12**	**40.48**	*ND*
33-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.15**	*ND*	**0.24**	*ND*	**0.13**	**52.23**	*ND*
33-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.12**	*ND*	**0.07**	*ND*	**0.09**	**46.06**	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																		
Vial ID	**157**	**158**	**165**	**167**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183 [4]**	**184**	**185**
33-2	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	*ND*
33-3	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.08**	*ND*	*ND*
33-4	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.06**	*ND*	*ND*
33-5	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-8	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-9	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-10	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.02**	*ND*	*ND*
33-11 [5]	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-12	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*
33-13	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*
33-14	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*
33-15	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*
33-16	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*
33-17	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*
33-18	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*
33-19	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.29**	*ND*	*ND*
33-20	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.07**	*ND*	*ND*
33-21	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*
33-22	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.05**	*ND*	*ND*
33-23	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*
33-24	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.03**	*ND*	*ND*
33-25	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*
33-26	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	**0.04**	*ND*	*ND*

Table 5. Raw and Spike Recovery-Corrected Total Masses of PCB Congeners Extracted from SPMEs.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Total Mass of PCB Congeners on SPME Fiber, Corrected for Recovery [2] (ng)																	
	187 [4]	189	190	191	193	194	195	196	197	199	200	201	202	203	205	206	207	208
33-2	**0.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-3	**0.43**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-4	**0.43**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-5	**0.33**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-6	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-7	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-8	**0.27**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-9	**0.30**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-10	**0.28**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-11 [5]	**0.13**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-12	**0.04**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-13	**0.36**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-14	**0.31**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-15	**0.32**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-16	**0.49**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-17	**0.41**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-18	**0.40**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-19	**0.37**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-20	**0.33**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-21	**0.26**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-22	**0.23**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-23	**0.25**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-24	**0.20**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-25	**0.27**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
33-26	**0.25**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*

Notes:

1 Results from analysis by Engineer Research and Development Center (ERDC) were provided on 11/12/15. Total mass of the PCB congener is given per fibers in each sample.

2 Masses of PCB congeners extracted from the fibers are corrected for the percent recovery of the internal recovery standard using the following equation:

$$\textit{Corrected PCB Mass} = \frac{\textit{Uncorrected PCB Mass}}{(\textit{Internal Spike Standard} \div 100\%)}$$

3 Reporting limit is 0.1 ng (uncorrected PCB congener mass per fiber).

4 It should be noted that PCB congeners 146, 149, 153, 183, and 187 were detected in all three trip blanks. Trip blanks were spiked with four PRCs (PCBs-29, 69, 104, and154) which did not include these congeners. Detection of these congeners is likely spurious and due to either an analytical artifact or contamination in the process. Concentrations of these congeners have been included in these calculations until further discussion with ERDC.

5 Due to poor fiber recovery, pore water concentrations could not be calculated for this sample.

6 Abbreviations:
NC = not calculated   ng = nanogram   PRC = performance reference compound
ND = not detected   PCB = polychlorobiphenyl   SPME = solid phase microextraction

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Sample ID	SPME Fiber Length Processed [1] (cm)	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)														
			1	3	4	5	6	7	8	9	10	12	13	14	15	16	17
33-2	Trip Blank 2	199.2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-3	Trip Blank 3	199.0	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-4	Trip Blank 4	198.0	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-5	B33-1-MM-SeaRing	193.0	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-6	B33-2-MM-SeaRing	195.2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-7	B33-3-MM-SeaRing	200.2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-8	B33-4-MM-SeaRing	178.3	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-9	B33-5-MM-Searing	199.3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-10	B33-6-MM-SeaRing	194.5	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-12	B33-7-MM-SeaRing	198.0	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-13	B33-8-MM-SeaRing	198.1	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-14	B33-9-MM-SeaRing	196.0	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-15	B33-10-MM-SeaRing	188.8	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-16	B33-1-MM-Core	384.2	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-17	B33-5-MM-Core	384.9	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-18	B33-9-MM-Core	382.9	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-19	B33-10-MM-Core	392.6	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-20	B33-3-MM-Core	394.1	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-21	B33-6B-MM-Core	398.8	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-22	B33-7-MM-Core	396.6	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-23	B33-6A-MM-Core	378.3	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-24	B33-4-MM-Core	389.4	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-25	B33-2-MM-Core	386.2	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-26	B33-8-MM-Core	393.4	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																
	18	19	20	22	24	25	26	27	28	29	31	32	33	34	35	37	40
33-2	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**3.04**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-3	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**3.27**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-4	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**3.29**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-5	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.87**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-6	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.61**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-7	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**1.36**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-8	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	**0.50**	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
33-9	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.93**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-10	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.25**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-12	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**2.11**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-13	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.49**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-14	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**1.15**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-15	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	**1.73**	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
33-16	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**1.14**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-17	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**1.02**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-18	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.48**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-19	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**1.41**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-20	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**1.25**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-21	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**1.10**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-22	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.94**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-23	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.05**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-24	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.63**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-25	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.78**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-26	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.29**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																
	41	42	44	45	46	47	48	49	51	52	53	54	56	59	60	63	64
33-2	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-3	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-4	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-5	< 0.007	< 0.007	**0.003**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-6	< 0.007	< 0.007	**0.005**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-7	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-8	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
33-9	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	**0.004**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-10	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-12	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-13	< 0.007	< 0.007	**0.008**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-14	< 0.007	< 0.007	**0.009**	< 0.007	< 0.007	< 0.007	< 0.007	**0.005**	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-15	< 0.008	< 0.008	**0.009**	< 0.008	< 0.008	< 0.008	< 0.008	**0.003**	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
33-16	< 0.004	< 0.004	**0.003**	< 0.004	< 0.004	< 0.004	< 0.004	**0.018**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-17	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.008**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-18	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.005**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-19	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.005**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-20	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.008**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-21	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.013**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-22	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.009**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-23	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.005**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-24	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.003**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-25	< 0.004	< 0.004	**0.004**	< 0.004	< 0.004	< 0.004	< 0.004	**0.013**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-26	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	**0.009**	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

	Concentration of PCB Congeners in PDMS [2] (ng $_{PCB}$/µL $_{PDMS}$)																
Vial ID	**66**	**67**	**69**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**	**87/115**	**90/101**	**91**
33-2	*< 0.007*	*< 0.007*	**3.213**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-3	*< 0.007*	*< 0.007*	**3.416**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-4	*< 0.007*	*< 0.007*	**3.402**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-5	*< 0.007*	*< 0.007*	**1.785**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-6	*< 0.007*	*< 0.007*	**1.674**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-7	*< 0.007*	*< 0.007*	**2.033**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-8	*< 0.008*	*< 0.008*	**1.202**	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	**0.004**	*< 0.008*
33-9	*< 0.007*	*< 0.007*	**1.883**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-10	*< 0.007*	*< 0.007*	**0.797**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-12	*< 0.007*	*< 0.007*	**2.620**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-13	*< 0.007*	*< 0.007*	**1.458**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-14	*< 0.007*	*< 0.007*	**1.975**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-15	*< 0.008*	*< 0.008*	**2.255**	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-16	*< 0.004*	*< 0.004*	**1.652**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-17	*< 0.004*	*< 0.004*	**1.404**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-18	*< 0.004*	*< 0.004*	**0.999**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-19	*< 0.004*	*< 0.004*	**1.816**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-20	*< 0.004*	*< 0.004*	**1.700**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-21	*< 0.004*	*< 0.004*	**1.492**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-22	*< 0.004*	*< 0.004*	**1.314**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-23	*< 0.004*	*< 0.004*	**0.340**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-24	*< 0.004*	*< 0.004*	**1.014**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-25	*< 0.004*	*< 0.004*	**1.337**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-26	*< 0.004*	*< 0.004*	**0.677**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)														
	92	**93**	**95**	**97**	**99**	**100**	**103**	**104**	**105**	**107**	**110**	**114**	**117**	**118**	**119**
33-2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**2.40**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**2.63**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-4	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**2.64**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-5	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.73**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-6	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.67**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-7	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.64**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-8	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	**1.30**	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-9	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.80**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-10	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.29**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-12	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**2.17**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-13	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.77**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-14	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	**1.77**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-15	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	**1.86**	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-16	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.35**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-17	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.17**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-18	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.09**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-19	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.30**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-20	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.28**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-21	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.10**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-22	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.00**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-23	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.77**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-24	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.81**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-25	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**1.11**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-26	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	**0.84**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																
	122	123	124	126	128	129	130	131	132	134	135	136	137	138/163/164	141	144	146 [3]
33-2	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-3	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-4	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-5	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-6	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-7	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-8	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	NC
33-9	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-10	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-12	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-13	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-14	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC
33-15	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	NC
33-16	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-17	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-18	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-19	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-20	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-21	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-22	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-23	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-24	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-25	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC
33-26	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)														
Vial ID	**147**	**149 [3]**	**151**	**153 [3]**	**154**	**156**	**157**	**158**	**165**	**167**	**169**	**170**	**171**	**172**	**173**
33-2	*< 0.007*	*NC*	*< 0.007*	*NC*	**3.94**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-3	*< 0.007*	*NC*	*< 0.007*	*NC*	**4.00**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-4	*< 0.007*	*NC*	*< 0.007*	*NC*	**4.04**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-5	*< 0.007*	*NC*	*< 0.007*	*NC*	**3.02**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-6	*< 0.007*	*NC*	*< 0.007*	*NC*	**3.14**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-7	*< 0.007*	*NC*	*< 0.007*	*NC*	**2.95**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-8	*< 0.008*	*NC*	*< 0.008*	*NC*	**2.58**	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-9	*< 0.007*	*NC*	*< 0.007*	*NC*	**2.99**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-10	*< 0.007*	*NC*	*< 0.007*	*NC*	**2.69**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-12	*< 0.007*	*NC*	*< 0.007*	*NC*	**3.75**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-13	*< 0.007*	*NC*	*< 0.007*	*NC*	**3.08**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-14	*< 0.007*	*NC*	*< 0.007*	*NC*	**3.02**	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-15	*< 0.008*	*NC*	*< 0.008*	*NC*	**3.06**	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-16	*< 0.004*	*NC*	*< 0.004*	*NC*	**2.17**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-17	*< 0.004*	*NC*	*< 0.004*	*NC*	**1.93**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-18	*< 0.004*	*NC*	*< 0.004*	*NC*	**2.34**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-19	*< 0.004*	*NC*	*< 0.004*	*NC*	**2.67**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-20	*< 0.004*	*NC*	*< 0.004*	*NC*	**2.45**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-21	*< 0.004*	*NC*	*< 0.004*	*NC*	**2.02**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-22	*< 0.004*	*NC*	*< 0.004*	*NC*	**1.80**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-23	*< 0.004*	*NC*	*< 0.004*	*NC*	**1.79**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-24	*< 0.004*	*NC*	*< 0.004*	*NC*	**1.50**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-25	*< 0.004*	*NC*	*< 0.004*	*NC*	**1.96**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-26	*< 0.004*	*NC*	*< 0.004*	*NC*	**1.69**	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)																
Vial ID	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183 [3]**	**184**	**185**	**187 [3]**	**189**	**190**	**191**	**193**	**194**	**195**
33-2	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-3	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-4	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-5	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-6	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-7	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-8	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	NC	< 0.008	< 0.008	NC	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
33-9	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-10	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-12	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-13	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-14	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	NC	< 0.007	< 0.007	NC	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
33-15	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	NC	< 0.008	< 0.008	NC	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
33-16	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-17	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-18	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-19	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-20	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-21	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-22	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-23	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-24	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-25	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
33-26	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	NC	< 0.004	< 0.004	NC	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004

Table 6. Concentrations of PCB Congeners in PDMS Coating of SPMEs.
SPAWAR Systems Center Pacific
San Diego, CA

Vial ID	Concentration of PCB Congeners in PDMS [2] ($ng_{PCB}/\mu L_{PDMS}$)										
	196	197	199	200	201	202	203	205	206	207	208
33-2	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-3	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-4	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-5	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-6	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-7	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-8	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-9	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-10	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-12	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-13	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-14	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*	*< 0.007*
33-15	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*
33-16	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-17	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-18	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-19	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-20	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-21	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-22	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-23	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-24	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-25	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*
33-26	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*	*< 0.004*

Notes:

1 Values from **Table 1**

2 Concentrations of PCB Congeners are calculated as the corrected total mass of PCB congeners divided by the volume of SPME fiber, assuming 0.06908 µL / cm_{PDMS}.

3 PCB congeners 146, 149, 153, 183, and 187 were detected in all three trip blanks. Trip blanks were spiked with four PRCs (PCBs-29, 69, 104, and154) which did not include these congeners. Detection of these congeners is likely spurious and due to either an analytical artifact or contamination in the process. Concentrations of these congeners have not been included in these calculations.

4 Abbreviations:

µL = microliter	ng = nanogram	SPME = solid phase microextraction
cm = centimeter	PCB = polychlorobiphenyl	
NC = not calculated	PDMS = polydimethylsiloxane	

Table 7. Correction Factors for Performance Reference Compounds and Derivation of Regression Models to Predict Correction Factors for other PCB Congeners.
SPAWAR Systems Center Pacific
San Diego, California

		Concentration of PCB Performance Reference Compounds in PDMS ($ng_{PCB}/\mu L_{PDMS}$) (Table 6)				Initial Correction Factors by PCB Homolog [1, 2, 3]				Log_{10} Correction Factors Used for Regression				Regression Model for Log_{10} CF on K_{fs} [4]			Model-predicted CF ÷ Observed CF for PRCs					Percent of Steady State Reached [5]			
Vial ID	Sample ID	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	Slope	Y-intercept	r^2	29 (Tri PRC)	69 (Tetra PRC)	104 (Penta PRC)	154 (Hexa PRC)	Average	Tri	Tetra	Penta	Hexa
33-5	B33-1-MM-SeaRing	0.87	1.78	1.73	3.02	1.38	2.14	3.09	4.09	0.14	0.33	0.49	0.61	1.10E-07	0.22	0.78	1.30	0.89	0.79	1.09	1.02	73%	47%	32%	24%
33-6	B33-2-MM-SeaRing	0.61	1.67	1.67	3.14	1.23	2.00	2.90	4.67	0.09	0.30	0.46	0.67	1.38E-07	0.16	0.86	1.29	0.87	0.82	1.08	1.02	81%	50%	35%	21%
33-7	B33-3-MM-SeaRing	1.36	2.03	1.64	2.95	1.74	2.55	2.78	3.83	0.24	0.41	0.44	0.58	7.64E-08	0.30	0.80	1.20	0.86	0.93	1.04	1.01	57%	39%	36%	26%
33-8	B33-4-MM-SeaRing	0.50	1.20	1.30	2.58	1.18	1.56	2.04	2.82	0.07	0.19	0.31	0.45	9.17E-08	0.11	0.89	1.16	0.94	0.87	1.05	1.01	85%	64%	49%	36%
33-9	B33-5-MM-Searing	0.93	1.88	1.80	2.99	1.41	2.29	3.36	3.98	0.15	0.36	0.53	0.60	1.01E-07	0.25	0.69	1.35	0.89	0.75	1.11	1.02	71%	44%	30%	25%
33-10	B33-6-MM-SeaRing	0.25	0.80	1.29	2.69	1.09	1.31	2.03	3.05	0.04	0.12	0.31	0.48	1.17E-07	0.05	0.93	1.12	1.00	0.84	1.06	1.01	92%	76%	49%	33%
33-12	B33-7-MM-SeaRing	2.11	2.62	2.17	3.75	2.94	4.62	6.67	16.11	0.47	0.66	0.82	1.21	1.85E-07	0.50	0.96	1.21	0.87	0.91	1.05	1.01	34%	22%	15%	6%
33-13	B33-8-MM-SeaRing	0.49	1.46	1.77	3.08	1.18	1.77	3.26	4.35	0.07	0.25	0.51	0.64	1.38E-07	0.15	0.79	1.31	0.96	0.70	1.13	1.03	85%	56%	31%	23%
33-14	B33-9-MM-SeaRing	1.15	1.98	1.77	3.02	1.56	2.44	3.25	4.12	0.19	0.39	0.51	0.61	9.50E-08	0.28	0.75	1.29	0.88	0.81	1.08	1.02	64%	41%	31%	24%
33-15	B33-10-MM-SeaRing	1.73	2.25	1.86	3.06	2.17	3.07	3.68	4.26	0.34	0.49	0.57	0.63	6.41E-08	0.40	0.70	1.22	0.90	0.86	1.06	1.01	46%	33%	27%	23%
33-16	B33-1-MM-Core	1.14	1.65	1.35	2.17	1.55	1.98	2.12	2.19	0.19	0.30	0.33	0.34	2.94E-08	0.24	0.51	1.15	0.92	0.91	1.04	1.00	64%	51%	47%	46%
33-17	B33-5-MM-Core	1.02	1.40	1.17	1.93	1.47	1.72	1.84	1.94	0.17	0.24	0.26	0.29	2.51E-08	0.20	0.64	1.09	0.95	0.94	1.03	1.00	68%	58%	54%	52%
33-18	B33-9-MM-Core	0.48	1.00	1.09	2.34	1.18	1.43	1.74	2.42	0.07	0.15	0.24	0.38	7.84E-08	0.09	0.94	1.10	0.95	0.93	1.03	1.00	85%	70%	58%	41%
33-19	B33-10-MM-Core	1.41	1.82	1.30	2.67	1.78	2.19	2.03	3.02	0.25	0.34	0.31	0.48	5.45E-08	0.26	0.85	1.05	0.89	1.08	0.98	1.00	56%	46%	49%	33%
33-20	B33-3-MM-Core	1.25	1.70	1.28	2.45	1.64	2.03	2.01	2.58	0.21	0.31	0.30	0.41	4.46E-08	0.24	0.83	1.09	0.90	1.01	1.00	1.00	61%	49%	50%	39%
33-21	B33-6B-MM-Core	1.10	1.49	1.10	2.02	1.53	1.81	1.76	2.02	0.18	0.26	0.24	0.31	2.56E-08	0.21	0.71	1.07	0.92	1.00	1.01	1.00	65%	55%	57%	49%
33-22	B33-7-MM-Core	0.94	1.31	1.00	1.80	1.41	1.65	1.64	1.82	0.15	0.22	0.22	0.26	2.30E-08	0.17	0.70	1.07	0.94	0.99	1.01	1.00	71%	61%	61%	55%
33-23	B33-6A-MM-Core	0.05	0.34	0.77	1.79	1.01	1.11	1.43	1.81	0.01	0.05	0.16	0.26	6.61E-08	0.01	0.93	1.06	1.01	0.90	1.03	1.00	99%	90%	70%	55%
33-24	B33-4-MM-Core	0.63	1.01	0.81	1.50	1.24	1.43	1.47	1.60	0.10	0.16	0.17	0.21	2.36E-08	0.12	0.73	1.07	0.94	0.97	1.01	1.00	80%	70%	68%	62%
33-25	B33-2-MM-Core	0.78	1.34	1.11	1.96	1.32	1.67	1.76	1.96	0.12	0.22	0.25	0.29	3.60E-08	0.16	0.68	1.13	0.92	0.94	1.03	1.00	76%	60%	57%	51%
33-26	B33-8-MM-Core	0.29	0.68	0.84	1.69	1.10	1.25	1.49	1.74	0.04	0.10	0.17	0.24	4.91E-08	0.06	0.88	1.08	0.98	0.92	1.03	1.00	91%	80%	67%	58%
Maximum [PRC in PDMS] for Core and SR Samples		2.11	2.62	2.27	4.50															Average		73%	55%	45%	35%
33-2	Trip Blank 2	3.04	3.21	2.40	3.94															Standard Deviation		16%	16%	17%	18%
33-3	Trip Blank 3	3.27	3.42	2.63	4.00																				
33-4	Trip Blank 4	3.29	3.40	2.64	4.04																				
Average Trip Blanks [2]		3.20	3.34	2.56	4.00																				

Notes:

1 $$CF = \frac{1}{\left(\dfrac{[PDMS_{t=0}] - [PDMS_{t=14}]}{[PDMS_{t=0}]}\right)}$$

2 $[PDMS]_{t=0}$ is the average concentration of PRCs in the trip blanks 2, 3 and 4.

3 $[PDMS]_{t=14}$ is the concentration of the PRC after 14 days in the sediment.

4 A linear regression model was developed from the observed relationship between Log_{10} of the Correction Factor and the fiber: water partition coefficient (K_{fs}, Table 4) for the four PRCs. Cells highlighted in red indicate a relationship that is not strong (r^2<0.8).

5 Calculated by Observed CF^{-1}

6 Abbreviations:

CF = correction factor	PCB = polychlorobiphenyl
µL = microliter	PDMS = polydimethylsiloxane
ng = nanogram	PRC = performance reference compound

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID				Model-predicted Correction Factors [3]											
Congener		Regression Model [2]		1	3	4	5	6	7	8	9	10	12	13	14
Homolog			Y-	Mono	Mono	Di	Di	Di	Di	Di	Di	Di	Di	Di	Di
K_{fs} (L/L_{PDMS}) [1]	Sample ID	Slope	intercept	16,388	71,536	42,124	88,009	88,009	88,009	88,009	88,009	42,124	183,877	183,877	183,877
33-5	B33-1-MM-SeaRing	1.10E-07	0.22	1.66	1.69	1.67	1.69	1.69	1.69	1.69	1.69	1.67	1.74	1.74	1.74
33-6	B33-2-MM-SeaRing	1.38E-07	0.16	1.46	1.49	1.48	1.5	1.5	1.5	1.5	1.5	1.48	1.54	1.54	1.54
33-7	B33-3-MM-SeaRing	7.64E-08	0.30	1.99	2.01	2	2.02	2.02	2.02	2.02	2.02	2	2.05	2.05	2.05
33-8	B33-4-MM-SeaRing	9.17E-08	0.11	1.3	1.31	1.3	1.32	1.32	1.32	1.32	1.32	1.3	1.34	1.34	1.34
33-9	B33-5-MM-Searing	1.01E-07	0.25	1.78	1.8	1.79	1.81	1.81	1.81	1.81	1.81	1.79	1.85	1.85	1.85
33-10	B33-6-MM-SeaRing	1.17E-07	0.05	1.13	1.15	1.14	1.15	1.15	1.15	1.15	1.15	1.14	1.18	1.18	1.18
33-12	B33-7-MM-SeaRing	1.85E-07	0.50	3.17	3.24	3.2	3.26	3.26	3.26	3.26	3.26	3.2	3.4	3.4	3.4
33-13	B33-8-MM-SeaRing	1.38E-07	0.15	1.42	1.44	1.43	1.45	1.45	1.45	1.45	1.45	1.43	1.5	1.5	1.5
33-14	B33-9-MM-SeaRing	9.50E-08	0.28	1.9	1.92	1.91	1.93	1.93	1.93	1.93	1.93	1.91	1.97	1.97	1.97
33-15	B33-10-MM-SeaRing	6.41E-08	0.40	2.54	2.56	2.55	2.56	2.56	2.56	2.56	2.56	2.55	2.6	2.6	2.6
33-16	B33-1-MM-Core	2.94E-08	0.24	1.75	1.76	1.75	1.76	1.76	1.76	1.76	1.76	1.75	1.77	1.77	1.77
33-17	B33-5-MM-Core	2.51E-08	0.20	1.58	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.6	1.6	1.6
33-18	B33-9-MM-Core	7.84E-08	0.09	1.23	1.24	1.23	1.24	1.24	1.24	1.24	1.24	1.23	1.27	1.27	1.27
33-19	B33-10-MM-Core	5.45E-08	0.26	1.82	1.83	1.82	1.83	1.83	1.83	1.83	1.83	1.82	1.85	1.85	1.85
33-20	B33-3-MM-Core	4.46E-08	0.24	1.74	1.75	1.74	1.75	1.75	1.75	1.75	1.75	1.74	1.77	1.77	1.77
33-21	B33-6B-MM-Core	2.56E-08	0.21	1.61	1.62	1.61	1.62	1.62	1.62	1.62	1.62	1.61	1.63	1.63	1.63
33-22	B33-7-MM-Core	2.30E-08	0.17	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.51	1.51	1.51
33-23	B33-6A-MM-Core	6.61E-08	0.01	1.03	1.04	1.03	1.04	1.04	1.04	1.04	1.04	1.03	1.06	1.06	1.06
33-24	B33-4-MM-Core	2.36E-08	0.12	1.31	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.33	1.33	1.33
33-25	B33-2-MM-Core	3.60E-08	0.16	1.46	1.47	1.46	1.47	1.47	1.47	1.47	1.47	1.46	1.48	1.48	1.48
33-26	B33-8-MM-Core	4.91E-08	0.06	1.15	1.16	1.15	1.16	1.16	1.16	1.16	1.16	1.15	1.17	1.17	1.17

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]											
Congener	**15**	**16**	**17**	**18**	**19**	**20**	**22**	**24**	**25**	**26**	**27**	**28**
Homolog	**Di**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**
K_{fs} (L/L_{PDMS}) [1]	**183,877**	**179,691**	**179,691**	**179,691**	**108,275**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**
33-5	1.74	1.73	1.73	1.73	1.7	1.78	1.78	1.73	1.78	1.78	1.73	1.78
33-6	1.54	1.54	1.54	1.54	1.51	1.6	1.6	1.54	1.6	1.6	1.54	1.6
33-7	2.05	2.05	2.05	2.05	2.02	2.09	2.09	2.05	2.09	2.09	2.05	2.09
33-8	1.34	1.34	1.34	1.34	1.32	1.37	1.37	1.34	1.37	1.37	1.34	1.37
33-9	1.85	1.85	1.85	1.85	1.82	1.9	1.9	1.85	1.9	1.9	1.85	1.9
33-10	1.18	1.18	1.18	1.18	1.16	1.22	1.22	1.18	1.22	1.22	1.18	1.22
33-12	3.4	3.39	3.39	3.39	3.29	3.56	3.56	3.39	3.56	3.56	3.39	3.56
33-13	1.5	1.5	1.5	1.5	1.46	1.55	1.55	1.5	1.55	1.55	1.5	1.55
33-14	1.97	1.97	1.97	1.97	1.94	2.01	2.01	1.97	2.01	2.01	1.97	2.01
33-15	2.6	2.6	2.6	2.6	2.57	2.64	2.64	2.6	2.64	2.64	2.6	2.64
33-16	1.77	1.77	1.77	1.77	1.76	1.78	1.78	1.77	1.78	1.78	1.77	1.78
33-17	1.6	1.6	1.6	1.6	1.59	1.61	1.61	1.6	1.61	1.61	1.6	1.61
33-18	1.27	1.26	1.26	1.26	1.25	1.29	1.29	1.26	1.29	1.29	1.26	1.29
33-19	1.85	1.85	1.85	1.85	1.84	1.88	1.88	1.85	1.88	1.88	1.85	1.88
33-20	1.77	1.77	1.77	1.77	1.75	1.79	1.79	1.77	1.79	1.79	1.77	1.79
33-21	1.63	1.63	1.63	1.63	1.62	1.64	1.64	1.63	1.64	1.64	1.63	1.64
33-22	1.51	1.51	1.51	1.51	1.5	1.52	1.52	1.51	1.52	1.52	1.51	1.52
33-23	1.06	1.06	1.06	1.06	1.05	1.07	1.07	1.06	1.07	1.07	1.06	1.07
33-24	1.33	1.33	1.33	1.33	1.32	1.33	1.33	1.33	1.33	1.33	1.33	1.33
33-25	1.48	1.48	1.48	1.48	1.47	1.49	1.49	1.48	1.49	1.49	1.48	1.49
33-26	1.17	1.17	1.17	1.17	1.16	1.19	1.19	1.17	1.19	1.19	1.17	1.19

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID		Model-predicted Correction Factors [3]											
Congener	**31**	**32**	**33**	**34**	**35**	**37**	**40**	**41**	**42**	**44**	**45**	**46**	**47**
Homolog	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**291,425**	**179,691**	**291,425**	**291,425**	**472,637**	**472,637**	**581,470**	**581,470**	**581,470**	**581,470**	**402,279**	**402,279**	**581,470**
33-5	1.78	1.73	1.78	1.78	1.87	1.87	1.92	1.92	1.92	1.92	1.83	1.83	1.92
33-6	1.6	1.54	1.6	1.6	1.69	1.69	1.75	1.75	1.75	1.75	1.65	1.65	1.75
33-7	2.09	2.05	2.09	2.09	2.16	2.16	2.2	2.2	2.2	2.2	2.13	2.13	2.2
33-8	1.37	1.34	1.37	1.37	1.43	1.43	1.46	1.46	1.46	1.46	1.41	1.41	1.46
33-9	1.9	1.85	1.9	1.9	1.98	1.98	2.03	2.03	2.03	2.03	1.95	1.95	2.03
33-10	1.22	1.18	1.22	1.22	1.28	1.28	1.32	1.32	1.32	1.32	1.25	1.25	1.32
33-12	3.56	3.39	3.56	3.56	3.85	3.85	4.03	4.03	4.03	4.03	3.73	3.73	4.03
33-13	1.55	1.5	1.55	1.55	1.64	1.64	1.7	1.7	1.7	1.7	1.6	1.6	1.7
33-14	2.01	1.97	2.01	2.01	2.1	2.1	2.15	2.15	2.15	2.15	2.06	2.06	2.15
33-15	2.64	2.6	2.64	2.64	2.71	2.71	2.76	2.76	2.76	2.76	2.68	2.68	2.76
33-16	1.78	1.77	1.78	1.78	1.8	1.8	1.82	1.82	1.82	1.82	1.79	1.79	1.82
33-17	1.61	1.6	1.61	1.61	1.63	1.63	1.64	1.64	1.64	1.64	1.62	1.62	1.64
33-18	1.29	1.26	1.29	1.29	1.33	1.33	1.36	1.36	1.36	1.36	1.32	1.32	1.36
33-19	1.88	1.85	1.88	1.88	1.92	1.92	1.95	1.95	1.95	1.95	1.91	1.91	1.95
33-20	1.79	1.77	1.79	1.79	1.82	1.82	1.84	1.84	1.84	1.84	1.81	1.81	1.84
33-21	1.64	1.63	1.64	1.64	1.66	1.66	1.67	1.67	1.67	1.67	1.65	1.65	1.67
33-22	1.52	1.51	1.52	1.52	1.53	1.53	1.54	1.54	1.54	1.54	1.53	1.53	1.54
33-23	1.07	1.06	1.07	1.07	1.1	1.1	1.12	1.12	1.12	1.12	1.09	1.09	1.12
33-24	1.33	1.33	1.33	1.33	1.35	1.35	1.36	1.36	1.36	1.36	1.34	1.34	1.36
33-25	1.49	1.48	1.49	1.49	1.51	1.51	1.53	1.53	1.53	1.53	1.51	1.51	1.53
33-26	1.19	1.17	1.19	1.19	1.21	1.21	1.23	1.23	1.23	1.23	1.2	1.2	1.23

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]											
Congener	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**581,470**	**581,470**	**402,279**	**581,470**	**402,279**	**441,090**	**840,480**	**581,470**	**840,480**	**840,480**	**581,470**	**840,480**
33-5	1.92	1.92	1.83	1.92	1.83	1.85	2.05	1.92	2.05	2.05	1.92	2.05
33-6	1.75	1.75	1.65	1.75	1.65	1.67	1.9	1.75	1.9	1.9	1.75	1.9
33-7	2.2	2.2	2.13	2.2	2.13	2.14	2.3	2.2	2.3	2.3	2.2	2.3
33-8	1.46	1.46	1.41	1.46	1.41	1.42	1.54	1.46	1.54	1.54	1.46	1.54
33-9	2.03	2.03	1.95	2.03	1.95	1.96	2.16	2.03	2.16	2.16	2.03	2.16
33-10	1.32	1.32	1.25	1.32	1.25	1.27	1.41	1.32	1.41	1.41	1.32	1.41
33-12	4.03	4.03	3.73	4.03	3.73	3.79	4.5	4.03	4.5	4.5	4.03	4.5
33-13	1.7	1.7	1.6	1.7	1.6	1.62	1.84	1.7	1.84	1.84	1.7	1.84
33-14	2.15	2.15	2.06	2.15	2.06	2.08	2.27	2.15	2.27	2.27	2.15	2.27
33-15	2.76	2.76	2.68	2.76	2.68	2.7	2.86	2.76	2.86	2.86	2.76	2.86
33-16	1.82	1.82	1.79	1.82	1.79	1.8	1.85	1.82	1.85	1.85	1.82	1.85
33-17	1.64	1.64	1.62	1.64	1.62	1.62	1.66	1.64	1.66	1.66	1.64	1.66
33-18	1.36	1.36	1.32	1.36	1.32	1.33	1.42	1.36	1.42	1.42	1.36	1.42
33-19	1.95	1.95	1.91	1.95	1.91	1.92	2.01	1.95	2.01	2.01	1.95	2.01
33-20	1.84	1.84	1.81	1.84	1.81	1.81	1.89	1.84	1.89	1.89	1.84	1.89
33-21	1.67	1.67	1.65	1.67	1.65	1.65	1.69	1.67	1.69	1.69	1.67	1.69
33-22	1.54	1.54	1.53	1.54	1.53	1.53	1.56	1.54	1.56	1.56	1.54	1.56
33-23	1.12	1.12	1.09	1.12	1.09	1.1	1.17	1.12	1.17	1.17	1.12	1.17
33-24	1.36	1.36	1.34	1.36	1.34	1.35	1.37	1.36	1.37	1.37	1.36	1.37
33-25	1.53	1.53	1.51	1.53	1.51	1.51	1.56	1.53	1.56	1.56	1.53	1.56
33-26	1.23	1.23	1.2	1.23	1.2	1.21	1.26	1.23	1.26	1.26	1.23	1.26

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]												
Congener	**67**	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**	**87/115**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**840,480**	**840,480**	**581,470**	**581,470**	**840,480**	**581,470**	**1,214,863**	**1,214,863**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,756,011**
33-5	2.05	2.05	1.92	1.92	2.05	1.92	2.25	2.25	2.58	2.58	2.3	2.58	2.58
33-6	1.9	1.9	1.75	1.75	1.9	1.75	2.14	2.14	2.54	2.54	2.2	2.54	2.54
33-7	2.3	2.3	2.2	2.2	2.3	2.2	2.46	2.46	2.7	2.7	2.5	2.7	2.7
33-8	1.54	1.54	1.46	1.46	1.54	1.46	1.67	1.67	1.87	1.87	1.7	1.87	1.87
33-9	2.16	2.16	2.03	2.03	2.16	2.03	2.35	2.35	2.67	2.67	2.4	2.67	2.67
33-10	1.41	1.41	1.32	1.32	1.41	1.32	1.56	1.56	1.8	1.8	1.6	1.8	1.8
33-12	4.5	4.5	4.03	4.03	4.5	4.03	5.28	5.28	6.65	6.65	5.48	6.65	6.65
33-13	1.84	1.84	1.7	1.7	1.84	1.7	2.08	2.08	2.47	2.47	2.13	2.47	2.47
33-14	2.27	2.27	2.15	2.15	2.27	2.15	2.46	2.46	2.77	2.77	2.51	2.77	2.77
33-15	2.86	2.86	2.76	2.76	2.86	2.76	3.03	3.03	3.28	3.28	3.07	3.28	3.28
33-16	1.85	1.85	1.82	1.82	1.85	1.82	1.9	1.9	1.97	1.97	1.91	1.97	1.97
33-17	1.66	1.66	1.64	1.64	1.66	1.64	1.7	1.7	1.75	1.75	1.71	1.75	1.75
33-18	1.42	1.42	1.36	1.36	1.42	1.36	1.52	1.52	1.68	1.68	1.55	1.68	1.68
33-19	2.01	2.01	1.95	1.95	2.01	1.95	2.11	2.11	2.26	2.26	2.13	2.26	2.26
33-20	1.89	1.89	1.84	1.84	1.89	1.84	1.96	1.96	2.08	2.08	1.98	2.08	2.08
33-21	1.69	1.69	1.67	1.67	1.69	1.67	1.73	1.73	1.79	1.79	1.74	1.79	1.79
33-22	1.56	1.56	1.54	1.54	1.56	1.54	1.59	1.59	1.64	1.64	1.6	1.64	1.64
33-23	1.17	1.17	1.12	1.12	1.17	1.12	1.24	1.24	1.34	1.34	1.25	1.34	1.34
33-24	1.37	1.37	1.36	1.36	1.37	1.36	1.4	1.4	1.45	1.45	1.41	1.45	1.45
33-25	1.56	1.56	1.53	1.53	1.56	1.53	1.61	1.61	1.68	1.68	1.62	1.68	1.68
33-26	1.26	1.26	1.23	1.23	1.26	1.23	1.32	1.32	1.4	1.4	1.33	1.4	1.4

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]														
Congener	**90/101**	**91**	**92**	**93**	**95**	**97**	**99**	**100**	**103**	**105**	**107**	**110**	**114**	**117**	**118**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**1,301,749**	**1,756,011**	**1,301,749**	**1,301,749**	**1,756,011**	**1,756,011**	**1,301,749**	**1,301,749**	**2,368,794**	**2,368,794**	**1,756,011**	**2,368,794**	**1,756,011**	**2,368,794**
33-5	2.58	2.3	2.58	2.3	2.3	2.58	2.58	2.3	2.3	3.01	3.01	2.58	3.01	2.58	3.01
33-6	2.54	2.2	2.54	2.2	2.2	2.54	2.54	2.2	2.2	3.08	3.08	2.54	3.08	2.54	3.08
33-7	2.7	2.5	2.7	2.5	2.5	2.7	2.7	2.5	2.5	3.01	3.01	2.7	3.01	2.7	3.01
33-8	1.87	1.7	1.87	1.7	1.7	1.87	1.87	1.7	1.7	2.13	2.13	1.87	2.13	1.87	2.13
33-9	2.67	2.4	2.67	2.4	2.4	2.67	2.67	2.4	2.4	3.08	3.08	2.67	3.08	2.67	3.08
33-10	1.8	1.6	1.8	1.6	1.6	1.8	1.8	1.6	1.6	2.13	2.13	1.8	2.13	1.8	2.13
33-12	6.65	5.48	6.65	5.48	5.48	6.65	6.65	5.48	5.48	8.64	8.64	6.65	8.64	6.65	8.64
33-13	2.47	2.13	2.47	2.13	2.13	2.47	2.47	2.13	2.13	2.99	2.99	2.47	2.99	2.47	2.99
33-14	2.77	2.51	2.77	2.51	2.51	2.77	2.77	2.51	2.51	3.17	3.17	2.77	3.17	2.77	3.17
33-15	3.28	3.07	3.28	3.07	3.07	3.28	3.28	3.07	3.07	3.59	3.59	3.28	3.59	3.28	3.59
33-16	1.97	1.91	1.97	1.91	1.91	1.97	1.97	1.91	1.91	2.05	2.05	1.97	2.05	1.97	2.05
33-17	1.75	1.71	1.75	1.71	1.71	1.75	1.75	1.71	1.71	1.81	1.81	1.75	1.81	1.75	1.81
33-18	1.68	1.55	1.68	1.55	1.55	1.68	1.68	1.55	1.55	1.88	1.88	1.68	1.88	1.68	1.88
33-19	2.26	2.13	2.26	2.13	2.13	2.26	2.26	2.13	2.13	2.44	2.44	2.26	2.44	2.26	2.44
33-20	2.08	1.98	2.08	1.98	1.98	2.08	2.08	1.98	1.98	2.21	2.21	2.08	2.21	2.08	2.21
33-21	1.79	1.74	1.79	1.74	1.74	1.79	1.79	1.74	1.74	1.85	1.85	1.79	1.85	1.79	1.85
33-22	1.64	1.6	1.64	1.6	1.6	1.64	1.64	1.6	1.6	1.69	1.69	1.64	1.69	1.64	1.69
33-23	1.34	1.25	1.34	1.25	1.25	1.34	1.34	1.25	1.25	1.47	1.47	1.34	1.47	1.34	1.47
33-24	1.45	1.41	1.45	1.41	1.41	1.45	1.45	1.41	1.41	1.49	1.49	1.45	1.49	1.45	1.49
33-25	1.68	1.62	1.68	1.62	1.62	1.68	1.68	1.62	1.62	1.77	1.77	1.68	1.77	1.68	1.77
33-26	1.4	1.33	1.4	1.33	1.33	1.4	1.4	1.33	1.33	1.5	1.5	1.4	1.5	1.4	1.5

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]													
Congener	**119**	**122**	**123**	**124**	**126**	**128**	**129**	**130**	**131**	**132**	**134**	**135**	**136**	**137**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**2,368,794**	**2,368,794**	**2,368,794**	**3,195,415**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**3,931,220**	**4,836,457**	**4,949,112**
33-5	2.58	3.01	3.01	3.01	3.71	5.78	5.78	5.78	4.47	4.47	4.47	4.47	5.62	5.78
33-6	2.54	3.08	3.08	3.08	4.01	6.98	6.98	6.98	5.06	5.06	5.06	5.06	6.74	6.98
33-7	2.7	3.01	3.01	3.01	3.48	4.74	4.74	4.74	3.96	3.96	3.96	3.96	4.65	4.74
33-8	1.87	2.13	2.13	2.13	2.54	3.67	3.67	3.67	2.96	2.96	2.96	2.96	3.59	3.67
33-9	2.67	3.08	3.08	3.08	3.73	5.61	5.61	5.61	4.43	4.43	4.43	4.43	5.47	5.61
33-10	1.8	2.13	2.13	2.13	2.66	4.26	4.26	4.26	3.24	3.24	3.24	3.24	4.14	4.26
33-12	6.65	8.64	8.64	8.64	12.3	26	26	26	16.8	16.8	16.8	16.8	24.8	26
33-13	2.47	2.99	2.99	2.99	3.89	6.79	6.79	6.79	4.91	4.91	4.91	4.91	6.55	6.79
33-14	2.77	3.17	3.17	3.17	3.8	5.58	5.58	5.58	4.46	4.46	4.46	4.46	5.44	5.58
33-15	3.28	3.59	3.59	3.59	4.06	5.25	5.25	5.25	4.52	4.52	4.52	4.52	5.17	5.25
33-16	1.97	2.05	2.05	2.05	2.17	2.44	2.44	2.44	2.28	2.28	2.28	2.28	2.42	2.44
33-17	1.75	1.81	1.81	1.81	1.9	2.11	2.11	2.11	1.99	1.99	1.99	1.99	2.09	2.11
33-18	1.68	1.88	1.88	1.88	2.18	2.99	2.99	2.99	2.49	2.49	2.49	2.49	2.93	2.99
33-19	2.26	2.44	2.44	2.44	2.71	3.37	3.37	3.37	2.97	2.97	2.97	2.97	3.33	3.37
33-20	2.08	2.21	2.21	2.21	2.41	2.88	2.88	2.88	2.6	2.6	2.6	2.6	2.85	2.88
33-21	1.79	1.85	1.85	1.85	1.94	2.16	2.16	2.16	2.03	2.03	2.03	2.03	2.14	2.16
33-22	1.64	1.69	1.69	1.69	1.77	1.94	1.94	1.94	1.84	1.84	1.84	1.84	1.93	1.94
33-23	1.34	1.47	1.47	1.47	1.67	2.18	2.18	2.18	1.87	1.87	1.87	1.87	2.15	2.18
33-24	1.45	1.49	1.49	1.49	1.56	1.72	1.72	1.72	1.63	1.63	1.63	1.63	1.71	1.72
33-25	1.68	1.77	1.77	1.77	1.9	2.19	2.19	2.19	2.02	2.02	2.02	2.02	2.17	2.19
33-26	1.4	1.5	1.5	1.5	1.65	2.01	2.01	2.01	1.79	1.79	1.79	1.79	1.98	2.01

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]												
Congener	**138/163/164 [6]**	**141**	**144**	**146 [4]**	**147**	**149 [4]**	**151**	**153 [4]**	**156**	**157**	**158**	**165**	**167**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**4,949,112**	**4,949,112**	**3,931,220**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**4,949,112**	**6,375,692**	**6,375,692**	**4,949,112**	**4,949,112**	**6,375,692**
33-5	5.78	5.78	4.47	*NC*	4.47	*NC*	4.47	*NC*	8.29	8.29	5.78	5.78	8.29
33-6	6.98	6.98	5.06	*NC*	5.06	*NC*	5.06	*NC*	11	11	6.98	6.98	11
33-7	4.74	4.74	3.96	*NC*	3.96	*NC*	3.96	*NC*	6.09	6.09	4.74	4.74	6.09
33-8	3.67	3.67	2.96	*NC*	2.96	*NC*	2.96	*NC*	4.96	4.96	3.67	3.67	4.96
33-9	5.61	5.61	4.43	*NC*	4.43	*NC*	4.43	*NC*	7.82	7.82	5.61	5.61	7.82
33-10	4.26	4.26	3.24	*NC*	3.24	*NC*	3.24	*NC*	6.26	6.26	4.26	4.26	6.26
33-12	26	26	16.8	*NC*	16.8	*NC*	16.8	*NC*	47.8	47.8	26	26	47.8
33-13	6.79	6.79	4.91	*NC*	4.91	*NC*	4.91	*NC*	10.7	10.7	6.79	6.79	10.7
33-14	5.58	5.58	4.46	*NC*	4.46	*NC*	4.46	*NC*	7.62	7.62	5.58	5.58	7.62
33-15	5.25	5.25	4.52	*NC*	4.52	*NC*	4.52	*NC*	6.49	6.49	5.25	5.25	6.49
33-16	2.44	2.44	2.28	*NC*	2.28	*NC*	2.28	*NC*	2.69	2.69	2.44	2.44	2.69
33-17	2.11	2.11	1.99	*NC*	1.99	*NC*	1.99	*NC*	2.29	2.29	2.11	2.11	2.29
33-18	2.99	2.99	2.49	*NC*	2.49	*NC*	2.49	*NC*	3.87	3.87	2.99	2.99	3.87
33-19	3.37	3.37	2.97	*NC*	2.97	*NC*	2.97	*NC*	4.03	4.03	3.37	3.37	4.03
33-20	2.88	2.88	2.6	*NC*	2.6	*NC*	2.6	*NC*	3.34	3.34	2.88	2.88	3.34
33-21	2.16	2.16	2.03	*NC*	2.03	*NC*	2.03	*NC*	2.35	2.35	2.16	2.16	2.35
33-22	1.94	1.94	1.84	*NC*	1.84	*NC*	1.84	*NC*	2.1	2.1	1.94	1.94	2.1
33-23	2.18	2.18	1.87	*NC*	1.87	*NC*	1.87	*NC*	2.71	2.71	2.18	2.18	2.71
33-24	1.72	1.72	1.63	*NC*	1.63	*NC*	1.63	*NC*	1.86	1.86	1.72	1.72	1.86
33-25	2.19	2.19	2.02	*NC*	2.02	*NC*	2.02	*NC*	2.47	2.47	2.19	2.19	2.47
33-26	2.01	2.01	1.79	*NC*	1.79	*NC*	1.79	*NC*	2.36	2.36	2.01	2.01	2.36

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]											
Congener	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**
Homolog	**Hexa**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**8,213,482**	**13,630,987**	**11,079,682**	**13,630,987**	**11,079,682**	**11,079,682**	**11,079,682**	**14,273,396**	**11,079,682**	**11,079,682**	**14,273,396**	**13,630,987**
33-5	13.2	51.8	27.2	51.8	27.2	27.2	27.2	61	27.2	27.2	61	51.8
33-6	19.6	> 100	48.7	> 100	48.7	48.7	48.7	> 100	48.7	48.7	> 100	> 100
33-7	8.42	21.9	13.9	21.9	13.9	13.9	13.9	24.5	13.9	13.9	24.5	21.9
33-8	7.31	22.9	13.4	22.9	13.4	13.4	13.4	26.3	13.4	13.4	26.3	22.9
33-9	12	42.3	23.4	42.3	23.4	23.4	23.4	49.2	23.4	23.4	49.2	42.3
33-10	10.3	44.1	22.2	44.1	22.2	22.2	22.2	52.4	22.2	22.2	52.4	44.1
33-12	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-13	19.1	> 100	47.4	> 100	47.4	47.4	47.4	> 100	47.4	47.4	> 100	> 100
33-14	11.4	37.2	21.3	37.2	21.3	21.3	21.3	42.9	21.3	21.3	42.9	37.2
33-15	8.51	18.9	13	18.9	13	13	13	20.8	13	13	20.8	18.9
33-16	3.05	4.4	3.7	4.4	3.7	3.7	3.7	4.59	3.7	3.7	4.59	4.4
33-17	2.54	3.48	3	3.48	3	3	3	3.61	3	3	3.61	3.48
33-18	5.39	14.3	9.05	14.3	9.05	9.05	9.05	16.1	9.05	9.05	16.1	14.3
33-19	5.08	10	7.28	10	7.28	7.28	7.28	10.9	7.28	7.28	10.9	10
33-20	4.03	7.03	5.41	7.03	5.41	5.41	5.41	7.51	5.41	5.41	7.51	7.03
33-21	2.61	3.6	3.1	3.6	3.1	3.1	3.1	3.74	3.1	3.1	3.74	3.6
33-22	2.31	3.08	2.69	3.08	2.69	2.69	2.69	3.18	2.69	2.69	3.18	3.08
33-23	3.59	8.19	5.55	8.19	5.55	5.55	5.55	9.03	5.55	5.55	9.03	8.19
33-24	2.05	2.75	2.4	2.75	2.4	2.4	2.4	2.85	2.4	2.4	2.85	2.75
33-25	2.88	4.51	3.65	4.51	3.65	3.65	3.65	4.75	3.65	3.65	4.75	4.51
33-26	2.9	5.36	4.02	5.36	4.02	4.02	4.02	5.76	4.02	4.02	5.76	5.36

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]											
Congener	**183 [4]**	**184**	**185**	**187 [4]**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**
K_{fs} (L/L_{PDMS}) [1]	**11,079,682**	**14,273,396**	**11,079,682**	**11,079,682**	**17,160,396**	**13,630,987**	**13,630,987**	**13,630,987**	**37,542,856**	**31,226,788**	**31,226,788**	**41,164,924**
33-5	*NC*	61	27.2	*NC*	> 100	51.8	51.8	51.8	> 100	> 100	> 100	> 100
33-6	*NC*	> 100	48.7	*NC*	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-7	*NC*	24.5	13.9	*NC*	40.7	21.9	21.9	21.9	> 100	> 100	> 100	> 100
33-8	*NC*	26.3	13.4	*NC*	48.3	22.9	22.9	22.9	> 100	> 100	> 100	> 100
33-9	*NC*	49.2	23.4	*NC*	96.3	42.3	42.3	42.3	> 100	> 100	> 100	> 100
33-10	*NC*	52.4	22.2	*NC*	> 100	44.1	44.1	44.1	> 100	> 100	> 100	> 100
33-12	*NC*	> 100	> 100	*NC*	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-13	*NC*	> 100	47.4	*NC*	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-14	*NC*	42.9	21.3	*NC*	80.6	37.2	37.2	37.2	> 100	> 100	> 100	> 100
33-15	*NC*	20.8	13	*NC*	31.9	18.9	18.9	18.9	> 100	> 100	> 100	> 100
33-16	*NC*	4.59	3.7	*NC*	5.58	4.4	4.4	4.4	22.2	14.5	14.5	28.3
33-17	*NC*	3.61	3	*NC*	4.27	3.48	3.48	3.48	13.9	9.63	9.63	17.1
33-18	*NC*	16.1	9.05	*NC*	27.1	14.3	14.3	14.3	> 100	> 100	> 100	> 100
33-19	*NC*	10.9	7.28	*NC*	15.6	10	10	10	> 100	91.1	91.1	> 100
33-20	*NC*	7.51	5.41	*NC*	10.1	7.03	7.03	7.03	82.1	42.9	42.9	> 100
33-21	*NC*	3.74	3.1	*NC*	4.43	3.6	3.6	3.6	14.7	10.2	10.2	18.3
33-22	*NC*	3.18	2.69	*NC*	3.71	3.08	3.08	3.08	10.9	7.82	7.82	13.2
33-23	*NC*	9.03	5.55	*NC*	14	8.19	8.19	8.19	> 100	> 100	> 100	> 100
33-24	*NC*	2.85	2.4	*NC*	3.33	2.75	2.75	2.75	10.1	7.15	7.15	12.3
33-25	*NC*	4.75	3.65	*NC*	6.04	4.51	4.51	4.51	32.7	19.4	19.4	44.1
33-26	*NC*	5.76	4.02	*NC*	7.98	5.36	5.36	5.36	79.8	39.1	39.1	> 100

Table 8. Corrections Factors for PCB Congeners, as Predicted from Sample-specific Regression Models and PDMS-water Partition Coefficients.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Model-predicted Correction Factors [3]								
Congener	**199**	**200**	**201**	**202**	**203**	**205**	**206**	**207**	**208**
Homolog	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Nona**	**Nona**	**Nona**
K_{fs} (L/L_{PDMS}) [1]	**41,164,924**	**41,164,924**	**31,226,788**	**41,164,924**	**31,226,788**	**37,542,856**	**84,047,986**	**113,377,614**	**113,377,614**
33-5	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-6	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-7	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-8	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-9	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-10	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-12	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-13	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-14	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-15	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-16	28.3	28.3	14.5	28.3	14.5	22.2	> 100	> 100	> 100
33-17	17.1	17.1	9.63	17.1	9.63	13.9	> 100	> 100	> 100
33-18	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-19	> 100	> 100	91.1	> 100	91.1	> 100	> 100	> 100	> 100
33-20	> 100	> 100	42.9	> 100	42.9	82.1	> 100	> 100	> 100
33-21	18.3	18.3	10.2	18.3	10.2	14.7	> 100	> 100	> 100
33-22	13.2	13.2	7.82	13.2	7.82	10.9	> 100	> 100	> 100
33-23	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100
33-24	12.3	12.3	7.15	12.3	7.15	10.1	> 100	> 100	> 100
33-25	44.1	44.1	19.4	44.1	19.4	32.7	> 100	> 100	> 100
33-26	> 100	> 100	39.1	> 100	39.1	79.8	> 100	> 100	> 100

Notes:

1 K_{fs} (L/L_{PDMS}) is the Fiber PDMS-Solution Water Partition Coefficient (**Table 4**)

2 Regression Model for Log_{10} CF on K_{fs} (**Table 7**)

3 Correction factors (CFs) for each PCB congener were calculated using regression models developed for each sample and the K_{fs} value. If the model-predicted CF was greater than 100 (indicating the sampling period was such that less than 1% of steady state concentrations were reached), conditions were considered insufficient to quantify an accurate and precise value.

4 PCB congeners 146, 149, 153, 183, and 187 were detected in all three trip blanks. Trip blanks were spiked with four PRCs (PCBs-29, 69, 104, and154) which did not include these congeners. Detection of these congeners is likely spurious and due to either an analytical artifact or contamination in the process. Concentrations of these congeners have not been included in these calculations.

5 If CF was estimated to be less than 1, the CF was assumed to be one.

6 PCB congener properties of the less chlorinated congener were used in calculations.

7 Abbreviations:
L = liter NC = not calculated PCB = polychlorobiphenyl

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

		Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)																
Vial ID		**1**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**
Homolog		**Mono**	**Mono**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Di**	**Tri**	**Tri**	**Tri**	**Tri**
K_{fs} (L/L_{PDMS}) [1]		**16,388**	**71,536**	**42,124**	**88,009**	**88,009**	**88,009**	**88,009**	**88,009**	**42,124**	**183,877**	**183,877**	**183,877**	**183,877**	**179,691**	**179,691**	**179,691**	**108,275**
S (ng/L) [2]	**Sample ID**	**2,480,000**	**2,480,000**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**596,190**	**139,910**	**139,910**	**139,910**	**139,910**
33-5	B33-1-MM-SeaRing	*< 0.71*	*< 0.17*	*< 0.28*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.28*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.066*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.11*
33-6	B33-2-MM-SeaRing	*< 0.62*	*< 0.15*	*< 0.25*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.25*	*< 0.059*	*< 0.059*	*< 0.059*	*< 0.059*	*< 0.06*	*< 0.06*	*< 0.06*	*< 0.098*
33-7	B33-3-MM-SeaRing	*< 0.85*	*< 0.2*	*< 0.33*	*< 0.16*	*< 0.16*	*< 0.16*	*< 0.16*	*< 0.16*	*< 0.33*	*< 0.078*	*< 0.078*	*< 0.078*	*< 0.078*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.13*
33-8	B33-4-MM-SeaRing	*< 0.63*	*< 0.15*	*< 0.25*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.25*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.06*	*< 0.06*	*< 0.06*	*< 0.098*
33-9	B33-5-MM-Searing	*< 0.76*	*< 0.18*	*< 0.3*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.14*	*< 0.3*	*< 0.07*	*< 0.07*	*< 0.07*	*< 0.07*	*< 0.072*	*< 0.072*	*< 0.072*	*< 0.12*
33-10	B33-6-MM-SeaRing	*< 0.48*	*< 0.11*	*< 0.19*	*< 0.091*	*< 0.091*	*< 0.091*	*< 0.091*	*< 0.091*	*< 0.19*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.045*	*< 0.046*	*< 0.046*	*< 0.046*	*< 0.075*
33-12	B33-7-MM-SeaRing	*< 1.4*	*< 0.32*	*< 0.53*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.26*	*< 0.53*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.13*	*< 0.21*
33-13	B33-8-MM-SeaRing	*< 0.61*	*< 0.14*	*< 0.24*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.24*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.057*	*< 0.058*	*< 0.058*	*< 0.058*	*< 0.094*
33-14	B33-9-MM-SeaRing	*< 0.81*	*< 0.19*	*< 0.32*	*< 0.15*	*< 0.15*	*< 0.15*	*< 0.15*	*< 0.15*	*< 0.32*	*< 0.075*	*< 0.075*	*< 0.075*	*< 0.075*	*< 0.077*	*< 0.077*	*< 0.077*	*< 0.13*
33-15	B33-10-MM-SeaRing	*< 1.2*	*< 0.29*	*< 0.48*	*< 0.23*	*< 0.23*	*< 0.23*	*< 0.23*	*< 0.23*	*< 0.48*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.11*	*< 0.12*	*< 0.12*	*< 0.12*	*< 0.19*
33-16	B33-1-MM-Core	*< 0.43*	*< 0.098*	*< 0.17*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.17*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.065*
33-17	B33-5-MM-Core	*< 0.39*	*< 0.089*	*< 0.15*	*< 0.072*	*< 0.072*	*< 0.072*	*< 0.072*	*< 0.072*	*< 0.15*	*< 0.035*	*< 0.035*	*< 0.035*	*< 0.035*	*< 0.036*	*< 0.036*	*< 0.036*	*< 0.059*
33-18	B33-9-MM-Core	*< 0.3*	*< 0.069*	*< 0.12*	*< 0.056*	*< 0.056*	*< 0.056*	*< 0.056*	*< 0.056*	*< 0.12*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.028*	*< 0.046*
33-19	B33-10-MM-Core	*< 0.44*	*< 0.1*	*< 0.17*	*< 0.083*	*< 0.083*	*< 0.083*	*< 0.083*	*< 0.083*	*< 0.17*	*< 0.04*	*< 0.04*	*< 0.04*	*< 0.04*	*< 0.041*	*< 0.041*	*< 0.041*	*< 0.068*
33-20	B33-3-MM-Core	*< 0.42*	*< 0.098*	*< 0.17*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.08*	*< 0.17*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.039*	*< 0.065*
33-21	B33-6B-MM-Core	*< 0.39*	*< 0.091*	*< 0.15*	*< 0.074*	*< 0.074*	*< 0.074*	*< 0.074*	*< 0.074*	*< 0.15*	*< 0.035*	*< 0.035*	*< 0.035*	*< 0.035*	*< 0.036*	*< 0.036*	*< 0.036*	*< 0.06*
33-22	B33-7-MM-Core	*< 0.37*	*< 0.084*	*< 0.14*	*< 0.068*	*< 0.068*	*< 0.068*	*< 0.068*	*< 0.068*	*< 0.14*	*< 0.033*	*< 0.033*	*< 0.033*	*< 0.033*	*< 0.034*	*< 0.034*	*< 0.034*	*< 0.055*
33-23	B33-6A-MM-Core	*< 0.25*	*< 0.058*	*< 0.098*	*< 0.047*	*< 0.047*	*< 0.047*	*< 0.047*	*< 0.047*	*< 0.098*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.023*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.039*
33-24	B33-4-MM-Core	*< 0.32*	*< 0.074*	*< 0.13*	*< 0.06*	*< 0.06*	*< 0.06*	*< 0.06*	*< 0.06*	*< 0.13*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.029*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.049*
33-25	B33-2-MM-Core	*< 0.36*	*< 0.082*	*< 0.14*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.067*	*< 0.14*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.032*	*< 0.033*	*< 0.033*	*< 0.033*	*< 0.054*
33-26	B33-8-MM-Core	*< 0.28*	*< 0.065*	*< 0.11*	*< 0.053*	*< 0.053*	*< 0.053*	*< 0.053*	*< 0.053*	*< 0.11*	*< 0.025*	*< 0.025*	*< 0.025*	*< 0.025*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.043*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)																
Vial ID	**20**	**22**	**24**	**25**	**26**	**27**	**28**	**31**	**32**	**33**	**34**	**35**	**37**	**40**	**41**	**42**	**44**
Homolog	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tri**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**179,691**	**291,425**	**291,425**	**472,637**	**472,637**	**581,470**	**581,470**	**581,470**	**581,470**
S (ng/L) [2]	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**139,910**	**32,245**	**32,245**	**32,245**	**32,245**
33-5	*< 0.043*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.043*	*< 0.067*	*< 0.043*	*< 0.043*	*< 0.028*	*< 0.028*	*< 0.023*	*< 0.023*	*< 0.023*	**0.011**
33-6	*< 0.038*	*< 0.038*	*< 0.06*	*< 0.038*	*< 0.038*	*< 0.06*	*< 0.038*	*< 0.038*	*< 0.06*	*< 0.038*	*< 0.038*	*< 0.025*	*< 0.025*	*< 0.021*	*< 0.021*	*< 0.021*	**0.014**
33-7	*< 0.05*	*< 0.05*	*< 0.08*	*< 0.05*	*< 0.05*	*< 0.08*	*< 0.05*	*< 0.05*	*< 0.08*	*< 0.05*	*< 0.05*	*< 0.032*	*< 0.032*	*< 0.026*	*< 0.026*	*< 0.026*	*< 0.026*
33-8	*< 0.038*	*< 0.038*	*< 0.06*	*< 0.038*	*< 0.038*	*< 0.06*	*< 0.038*	*< 0.038*	*< 0.06*	*< 0.038*	*< 0.038*	*< 0.024*	*< 0.024*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
33-9	*< 0.046*	*< 0.046*	*< 0.072*	*< 0.046*	*< 0.046*	*< 0.072*	*< 0.046*	*< 0.046*	*< 0.072*	*< 0.046*	*< 0.046*	*< 0.029*	*< 0.029*	*< 0.024*	*< 0.024*	*< 0.024*	*< 0.024*
33-10	*< 0.029*	*< 0.029*	*< 0.046*	*< 0.029*	*< 0.029*	*< 0.046*	*< 0.029*	*< 0.029*	*< 0.046*	*< 0.029*	*< 0.029*	*< 0.019*	*< 0.019*	*< 0.016*	*< 0.016*	*< 0.016*	*< 0.016*
33-12	*< 0.086*	*< 0.086*	*< 0.13*	*< 0.086*	*< 0.086*	*< 0.13*	*< 0.086*	*< 0.086*	*< 0.13*	*< 0.086*	*< 0.086*	*< 0.057*	*< 0.057*	*< 0.049*	*< 0.049*	*< 0.049*	*< 0.049*
33-13	*< 0.037*	*< 0.037*	*< 0.058*	*< 0.037*	*< 0.037*	*< 0.058*	*< 0.037*	*< 0.037*	*< 0.058*	*< 0.037*	*< 0.037*	*< 0.024*	*< 0.024*	*< 0.02*	*< 0.02*	*< 0.02*	**0.023**
33-14	*< 0.048*	*< 0.048*	*< 0.077*	*< 0.048*	*< 0.048*	*< 0.077*	*< 0.048*	*< 0.048*	*< 0.077*	*< 0.048*	*< 0.048*	*< 0.031*	*< 0.031*	*< 0.026*	*< 0.026*	*< 0.026*	**0.034**
33-15	*< 0.072*	*< 0.072*	*< 0.12*	*< 0.072*	*< 0.072*	*< 0.12*	*< 0.072*	*< 0.072*	*< 0.12*	*< 0.072*	*< 0.072*	*< 0.046*	*< 0.046*	*< 0.038*	*< 0.038*	*< 0.038*	**0.042**
33-16	*< 0.024*	*< 0.024*	*< 0.039*	*< 0.024*	*< 0.024*	*< 0.039*	*< 0.024*	*< 0.024*	*< 0.039*	*< 0.024*	*< 0.024*	*< 0.015*	*< 0.015*	*< 0.013*	*< 0.013*	*< 0.013*	**0.008**
33-17	*< 0.022*	*< 0.022*	*< 0.036*	*< 0.022*	*< 0.022*	*< 0.036*	*< 0.022*	*< 0.022*	*< 0.036*	*< 0.022*	*< 0.022*	*< 0.014*	*< 0.014*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*
33-18	*< 0.018*	*< 0.018*	*< 0.028*	*< 0.018*	*< 0.018*	*< 0.028*	*< 0.018*	*< 0.018*	*< 0.028*	*< 0.018*	*< 0.018*	*< 0.011*	*< 0.011*	*< 0.0094*	*< 0.0094*	*< 0.0094*	*< 0.0094*
33-19	*< 0.026*	*< 0.026*	*< 0.041*	*< 0.026*	*< 0.026*	*< 0.041*	*< 0.026*	*< 0.026*	*< 0.041*	*< 0.026*	*< 0.026*	*< 0.016*	*< 0.016*	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.013*
33-20	*< 0.025*	*< 0.025*	*< 0.039*	*< 0.025*	*< 0.025*	*< 0.039*	*< 0.025*	*< 0.025*	*< 0.039*	*< 0.025*	*< 0.025*	*< 0.015*	*< 0.015*	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.013*
33-21	*< 0.023*	*< 0.023*	*< 0.036*	*< 0.023*	*< 0.023*	*< 0.036*	*< 0.023*	*< 0.023*	*< 0.036*	*< 0.023*	*< 0.023*	*< 0.014*	*< 0.014*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*
33-22	*< 0.021*	*< 0.021*	*< 0.034*	*< 0.021*	*< 0.021*	*< 0.034*	*< 0.021*	*< 0.021*	*< 0.034*	*< 0.021*	*< 0.021*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.011*	*< 0.011*
33-23	*< 0.015*	*< 0.015*	*< 0.024*	*< 0.015*	*< 0.015*	*< 0.024*	*< 0.015*	*< 0.015*	*< 0.024*	*< 0.015*	*< 0.015*	*< 0.0093*	*< 0.0093*	*< 0.0077*	*< 0.0077*	*< 0.0077*	*< 0.0077*
33-24	*< 0.018*	*< 0.018*	*< 0.03*	*< 0.018*	*< 0.018*	*< 0.03*	*< 0.018*	*< 0.018*	*< 0.03*	*< 0.018*	*< 0.018*	*< 0.011*	*< 0.011*	*< 0.0094*	*< 0.0094*	*< 0.0094*	*< 0.0094*
33-25	*< 0.02*	*< 0.02*	*< 0.033*	*< 0.02*	*< 0.02*	*< 0.033*	*< 0.02*	*< 0.02*	*< 0.033*	*< 0.02*	*< 0.02*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.011*	**0.011**
33-26	*< 0.016*	*< 0.016*	*< 0.026*	*< 0.016*	*< 0.016*	*< 0.026*	*< 0.016*	*< 0.016*	*< 0.026*	*< 0.016*	*< 0.016*	*< 0.01*	*< 0.01*	*< 0.0085*	*< 0.0085*	*< 0.0085*	*< 0.0085*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)															
Vial ID	**45**	**46**	**47**	**48**	**49**	**51**	**52**	**53**	**54**	**56**	**59**	**60**	**63**	**64**	**66**	**67**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**
K_{fs} (L/L_{PDMS}) [1]	**402,279**	**402,279**	**581,470**	**581,470**	**581,470**	**402,279**	**581,470**	**402,279**	**441,090**	**840,480**	**581,470**	**840,480**	**840,480**	**581,470**	**840,480**	**840,480**
S (ng/L) [2]	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**
33-5	< 0.032	< 0.032	< 0.023	< 0.023	< 0.023	< 0.032	< 0.023	< 0.032	< 0.029	< 0.017	< 0.023	< 0.017	< 0.017	< 0.023	< 0.017	< 0.017
33-6	< 0.029	< 0.029	< 0.021	< 0.021	< 0.021	< 0.029	< 0.021	< 0.029	< 0.027	< 0.016	< 0.021	< 0.016	< 0.016	< 0.021	< 0.016	< 0.016
33-7	< 0.037	< 0.037	< 0.026	< 0.026	< 0.026	< 0.037	< 0.026	< 0.037	< 0.034	< 0.019	< 0.026	< 0.019	< 0.019	< 0.026	< 0.019	< 0.019
33-8	< 0.028	< 0.028	< 0.02	< 0.02	< 0.02	< 0.028	< 0.02	< 0.028	< 0.026	< 0.015	< 0.02	< 0.015	< 0.015	< 0.02	< 0.015	< 0.015
33-9	< 0.034	< 0.034	< 0.024	< 0.024	**0.013**	< 0.034	< 0.024	< 0.034	< 0.031	< 0.018	< 0.024	< 0.018	< 0.018	< 0.024	< 0.018	< 0.018
33-10	< 0.022	< 0.022	< 0.016	< 0.016	< 0.016	< 0.022	< 0.016	< 0.022	< 0.02	< 0.012	< 0.016	< 0.012	< 0.012	< 0.016	< 0.012	< 0.012
33-12	< 0.065	< 0.065	< 0.049	< 0.049	< 0.049	< 0.065	< 0.049	< 0.065	< 0.06	< 0.037	< 0.049	< 0.037	< 0.037	< 0.049	< 0.037	< 0.037
33-13	< 0.028	< 0.028	< 0.02	< 0.02	< 0.02	< 0.028	< 0.02	< 0.028	< 0.026	< 0.015	< 0.02	< 0.015	< 0.015	< 0.02	< 0.015	< 0.015
33-14	< 0.036	< 0.036	< 0.026	< 0.026	**0.018**	< 0.036	< 0.026	< 0.036	< 0.033	< 0.019	< 0.026	< 0.019	< 0.019	< 0.026	< 0.019	< 0.019
33-15	< 0.053	< 0.053	< 0.038	< 0.038	**0.014**	< 0.053	< 0.038	< 0.053	< 0.049	< 0.027	< 0.038	< 0.027	< 0.027	< 0.038	< 0.027	< 0.027
33-16	< 0.018	< 0.018	< 0.013	< 0.013	**0.055**	< 0.018	< 0.013	< 0.018	< 0.016	< 0.0088	< 0.013	< 0.0088	< 0.0088	< 0.013	< 0.0088	< 0.0088
33-17	< 0.016	< 0.016	< 0.011	< 0.011	**0.021**	< 0.016	< 0.011	< 0.016	< 0.015	< 0.0079	< 0.011	< 0.0079	< 0.0079	< 0.011	< 0.0079	< 0.0079
33-18	< 0.013	< 0.013	< 0.0094	< 0.0094	**0.012**	< 0.013	< 0.0094	< 0.013	< 0.012	< 0.0068	< 0.0094	< 0.0068	< 0.0068	< 0.0094	< 0.0068	< 0.0068
33-19	< 0.019	< 0.019	< 0.013	< 0.013	**0.018**	< 0.019	< 0.013	< 0.019	< 0.017	< 0.0096	< 0.013	< 0.0096	< 0.0096	< 0.013	< 0.0096	< 0.0096
33-20	< 0.018	< 0.018	< 0.013	< 0.013	**0.026**	< 0.018	< 0.013	< 0.018	< 0.016	< 0.009	< 0.013	< 0.009	< 0.009	< 0.013	< 0.009	< 0.009
33-21	< 0.016	< 0.016	< 0.011	< 0.011	**0.037**	< 0.016	< 0.011	< 0.016	< 0.015	< 0.008	< 0.011	< 0.008	< 0.008	< 0.011	< 0.008	< 0.008
33-22	< 0.015	< 0.015	< 0.011	< 0.011	**0.023**	< 0.015	< 0.011	< 0.015	< 0.014	< 0.0074	< 0.011	< 0.0074	< 0.0074	< 0.011	< 0.0074	< 0.0074
33-23	< 0.011	< 0.011	< 0.0077	< 0.0077	**0.0089**	< 0.011	< 0.0077	< 0.011	< 0.01	< 0.0056	< 0.0077	< 0.0056	< 0.0056	< 0.0077	< 0.0056	< 0.0056
33-24	< 0.013	< 0.013	< 0.0094	< 0.0094	**0.007**	< 0.013	< 0.0094	< 0.013	< 0.012	< 0.0065	< 0.0094	< 0.0065	< 0.0065	< 0.0094	< 0.0065	< 0.0065
33-25	< 0.015	< 0.015	< 0.011	< 0.011	**0.034**	< 0.015	< 0.011	< 0.015	< 0.014	< 0.0074	< 0.011	< 0.0074	< 0.0074	< 0.011	< 0.0074	< 0.0074
33-26	< 0.012	< 0.012	< 0.0085	< 0.0085	**0.019**	< 0.012	< 0.0085	< 0.012	< 0.011	< 0.006	< 0.0085	< 0.006	< 0.006	< 0.0085	< 0.006	< 0.006

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)													
Vial ID	**70**	**71**	**73**	**74**	**75**	**77**	**81**	**82**	**83**	**84**	**85**	**87/115**	**90/101**	**91**
Homolog	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Tetra**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**840,480**	**581,470**	**581,470**	**840,480**	**581,470**	**1,214,863**	**1,214,863**	**1,756,011**	**1,756,011**	**1,301,749**	**1,756,011**	**1,756,011**	**1,756,011**	**1,301,749**
S (ng/L) [2]	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**32,245**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**
33-5	< 0.017	< 0.023	< 0.023	< 0.017	< 0.023	< 0.013	< 0.013	< 0.01	< 0.01	< 0.012	< 0.01	< 0.01	< 0.01	< 0.012
33-6	< 0.016	< 0.021	< 0.021	< 0.016	< 0.021	< 0.012	< 0.012	< 0.01	< 0.01	< 0.012	< 0.01	< 0.01	< 0.01	< 0.012
33-7	< 0.019	< 0.026	< 0.026	< 0.019	< 0.026	< 0.014	< 0.014	< 0.011	< 0.011	< 0.013	< 0.011	< 0.011	< 0.011	< 0.013
33-8	< 0.015	< 0.02	< 0.02	< 0.015	< 0.02	< 0.011	< 0.011	< 0.0085	< 0.0085	< 0.01	< 0.0085	< 0.0085	**0.0044**	< 0.01
33-9	< 0.018	< 0.024	< 0.024	< 0.018	< 0.024	< 0.014	< 0.014	< 0.011	< 0.011	< 0.013	< 0.011	< 0.011	< 0.011	< 0.013
33-10	< 0.012	< 0.016	< 0.016	< 0.012	< 0.016	< 0.009	< 0.009	< 0.0072	< 0.0072	< 0.0086	< 0.0072	< 0.0072	< 0.0072	< 0.0086
33-12	< 0.037	< 0.049	< 0.049	< 0.037	< 0.049	< 0.03	< 0.03	< 0.027	< 0.027	< 0.029	< 0.027	< 0.027	< 0.027	< 0.029
33-13	< 0.015	< 0.02	< 0.02	< 0.015	< 0.02	< 0.012	< 0.012	< 0.0098	< 0.0098	< 0.011	< 0.0098	< 0.0098	< 0.0098	< 0.011
33-14	< 0.019	< 0.026	< 0.026	< 0.019	< 0.026	< 0.014	< 0.014	< 0.011	< 0.011	< 0.013	< 0.011	< 0.011	< 0.011	< 0.013
33-15	< 0.027	< 0.038	< 0.038	< 0.027	< 0.038	< 0.02	< 0.02	< 0.015	< 0.015	< 0.019	< 0.015	< 0.015	< 0.015	< 0.019
33-16	< 0.0088	< 0.013	< 0.013	< 0.0088	< 0.013	< 0.0063	< 0.0063	< 0.0045	< 0.0045	< 0.0059	< 0.0045	< 0.0045	< 0.0045	< 0.0059
33-17	< 0.0079	< 0.011	< 0.011	< 0.0079	< 0.011	< 0.0056	< 0.0056	< 0.004	< 0.004	< 0.0053	< 0.004	< 0.004	< 0.004	< 0.0053
33-18	< 0.0068	< 0.0094	< 0.0094	< 0.0068	< 0.0094	< 0.005	< 0.005	< 0.0038	< 0.0038	< 0.0048	< 0.0038	< 0.0038	< 0.0038	< 0.0048
33-19	< 0.0096	< 0.013	< 0.013	< 0.0096	< 0.013	< 0.0069	< 0.0069	< 0.0051	< 0.0051	< 0.0065	< 0.0051	< 0.0051	< 0.0051	< 0.0065
33-20	< 0.009	< 0.013	< 0.013	< 0.009	< 0.013	< 0.0065	< 0.0065	< 0.0047	< 0.0047	< 0.0061	< 0.0047	< 0.0047	< 0.0047	< 0.0061
33-21	< 0.008	< 0.011	< 0.011	< 0.008	< 0.011	< 0.0057	< 0.0057	< 0.0041	< 0.0041	< 0.0053	< 0.0041	< 0.0041	< 0.0041	< 0.0053
33-22	< 0.0074	< 0.011	< 0.011	< 0.0074	< 0.011	< 0.0052	< 0.0052	< 0.0037	< 0.0037	< 0.0049	< 0.0037	< 0.0037	< 0.0037	< 0.0049
33-23	< 0.0056	< 0.0077	< 0.0077	< 0.0056	< 0.0077	< 0.0041	< 0.0041	< 0.0031	< 0.0031	< 0.0038	< 0.0031	< 0.0031	< 0.0031	< 0.0038
33-24	< 0.0065	< 0.0094	< 0.0094	< 0.0065	< 0.0094	< 0.0046	< 0.0046	< 0.0033	< 0.0033	< 0.0043	< 0.0033	< 0.0033	< 0.0033	< 0.0043
33-25	< 0.0074	< 0.011	< 0.011	< 0.0074	< 0.011	< 0.0053	< 0.0053	< 0.0038	< 0.0038	< 0.005	< 0.0038	< 0.0038	< 0.0038	< 0.005
33-26	< 0.006	< 0.0085	< 0.0085	< 0.006	< 0.0085	< 0.0043	< 0.0043	< 0.0032	< 0.0032	< 0.0041	< 0.0032	< 0.0032	< 0.0032	< 0.0041

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)														
Vial ID	**92**	**93**	**95**	**97**	**99**	**100**	**103**	**105**	**107**	**110**	**114**	**117**	**118**	**119**	**122**
Homolog	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**	**Penta**
K_{fs} (L/L_{PDMS}) [1]	**1,756,011**	**1,301,749**	**1,301,749**	**1,756,011**	**1,756,011**	**1,301,749**	**1,301,749**	**2,368,794**	**2,368,794**	**1,756,011**	**2,368,794**	**1,756,011**	**2,368,794**	**1,756,011**	**2,368,794**
S (ng/L) [2]	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**	**7,328**
33-5	*< 0.01*	*< 0.012*	*< 0.012*	*< 0.01*	*< 0.01*	*< 0.012*	*< 0.012*	*< 0.0089*	*< 0.0089*	*< 0.01*	*< 0.0089*	*< 0.01*	*< 0.0089*	*< 0.01*	*< 0.0089*
33-6	*< 0.01*	*< 0.012*	*< 0.012*	*< 0.01*	*< 0.01*	*< 0.012*	*< 0.012*	*< 0.0091*	*< 0.0091*	*< 0.01*	*< 0.0091*	*< 0.01*	*< 0.0091*	*< 0.01*	*< 0.0091*
33-7	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.0089*	*< 0.0089*	*< 0.011*	*< 0.0089*	*< 0.011*	*< 0.0089*	*< 0.011*	*< 0.0089*
33-8	*< 0.0085*	*< 0.01*	*< 0.01*	*< 0.0085*	*< 0.0085*	*< 0.01*	*< 0.01*	*< 0.0072*	*< 0.0072*	*< 0.0085*	*< 0.0072*	*< 0.0085*	*< 0.0072*	*< 0.0085*	*< 0.0072*
33-9	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.0091*	*< 0.0091*	*< 0.011*	*< 0.0091*	*< 0.011*	*< 0.0091*	*< 0.011*	*< 0.0091*
33-10	*< 0.0072*	*< 0.0086*	*< 0.0086*	*< 0.0072*	*< 0.0072*	*< 0.0086*	*< 0.0086*	*< 0.0063*	*< 0.0063*	*< 0.0072*	*< 0.0063*	*< 0.0072*	*< 0.0063*	*< 0.0072*	*< 0.0063*
33-12	*< 0.027*	*< 0.029*	*< 0.029*	*< 0.027*	*< 0.027*	*< 0.029*	*< 0.029*	*< 0.026*	*< 0.026*	*< 0.027*	*< 0.026*	*< 0.027*	*< 0.026*	*< 0.027*	*< 0.026*
33-13	*< 0.0098*	*< 0.011*	*< 0.011*	*< 0.0098*	*< 0.0098*	*< 0.011*	*< 0.011*	*< 0.0088*	*< 0.0088*	*< 0.0098*	*< 0.0088*	*< 0.0098*	*< 0.0088*	*< 0.0098*	*< 0.0088*
33-14	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.011*	*< 0.011*	*< 0.013*	*< 0.013*	*< 0.0094*	*< 0.0094*	*< 0.011*	*< 0.0094*	*< 0.011*	*< 0.0094*	*< 0.011*	*< 0.0094*
33-15	*< 0.015*	*< 0.019*	*< 0.019*	*< 0.015*	*< 0.015*	*< 0.019*	*< 0.019*	*< 0.012*	*< 0.012*	*< 0.015*	*< 0.012*	*< 0.015*	*< 0.012*	*< 0.015*	*< 0.012*
33-16	*< 0.0045*	*< 0.0059*	*< 0.0059*	*< 0.0045*	*< 0.0045*	*< 0.0059*	*< 0.0059*	*< 0.0035*	*< 0.0035*	*< 0.0045*	*< 0.0035*	*< 0.0045*	*< 0.0035*	*< 0.0045*	*< 0.0035*
33-17	*< 0.004*	*< 0.0053*	*< 0.0053*	*< 0.004*	*< 0.004*	*< 0.0053*	*< 0.0053*	*< 0.0031*	*< 0.0031*	*< 0.004*	*< 0.0031*	*< 0.004*	*< 0.0031*	*< 0.004*	*< 0.0031*
33-18	*< 0.0038*	*< 0.0048*	*< 0.0048*	*< 0.0038*	*< 0.0038*	*< 0.0048*	*< 0.0048*	*< 0.0032*	*< 0.0032*	*< 0.0038*	*< 0.0032*	*< 0.0038*	*< 0.0032*	*< 0.0038*	*< 0.0032*
33-19	*< 0.0051*	*< 0.0065*	*< 0.0065*	*< 0.0051*	*< 0.0051*	*< 0.0065*	*< 0.0065*	*< 0.0041*	*< 0.0041*	*< 0.0051*	*< 0.0041*	*< 0.0051*	*< 0.0041*	*< 0.0051*	*< 0.0041*
33-20	*< 0.0047*	*< 0.0061*	*< 0.0061*	*< 0.0047*	*< 0.0047*	*< 0.0061*	*< 0.0061*	*< 0.0037*	*< 0.0037*	*< 0.0047*	*< 0.0037*	*< 0.0047*	*< 0.0037*	*< 0.0047*	*< 0.0037*
33-21	*< 0.0041*	*< 0.0053*	*< 0.0053*	*< 0.0041*	*< 0.0041*	*< 0.0053*	*< 0.0053*	*< 0.0031*	*< 0.0031*	*< 0.0041*	*< 0.0031*	*< 0.0041*	*< 0.0031*	*< 0.0041*	*< 0.0031*
33-22	*< 0.0037*	*< 0.0049*	*< 0.0049*	*< 0.0037*	*< 0.0037*	*< 0.0049*	*< 0.0049*	*< 0.0029*	*< 0.0029*	*< 0.0037*	*< 0.0029*	*< 0.0037*	*< 0.0029*	*< 0.0037*	*< 0.0029*
33-23	*< 0.0031*	*< 0.0038*	*< 0.0038*	*< 0.0031*	*< 0.0031*	*< 0.0038*	*< 0.0038*	*< 0.0025*	*< 0.0025*	*< 0.0031*	*< 0.0025*	*< 0.0031*	*< 0.0025*	*< 0.0031*	*< 0.0025*
33-24	*< 0.0033*	*< 0.0043*	*< 0.0043*	*< 0.0033*	*< 0.0033*	*< 0.0043*	*< 0.0043*	*< 0.0025*	*< 0.0025*	*< 0.0033*	*< 0.0025*	*< 0.0033*	*< 0.0025*	*< 0.0033*	*< 0.0025*
33-25	*< 0.0038*	*< 0.005*	*< 0.005*	*< 0.0038*	*< 0.0038*	*< 0.005*	*< 0.005*	*< 0.003*	*< 0.003*	*< 0.0038*	*< 0.003*	*< 0.0038*	*< 0.003*	*< 0.0038*	*< 0.003*
33-26	*< 0.0032*	*< 0.0041*	*< 0.0041*	*< 0.0032*	*< 0.0032*	*< 0.0041*	*< 0.0041*	*< 0.0025*	*< 0.0025*	*< 0.0032*	*< 0.0025*	*< 0.0032*	*< 0.0025*	*< 0.0032*	*< 0.0025*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)													
Vial ID	**123**	**124**	**126**	**128**	**129**	**130**	**131**	**132**	**134**	**135**	**136**	**137**	**138/163/164**	**141**
Homolog	**Penta**	**Penta**	**Penta**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**
K_{fs} (L/L_{PDMS}) [1]	**2,368,794**	**2,368,794**	**3,195,415**	**4,949,112**	**4,949,112**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**3,931,220**	**4,836,457**	**4,949,112**	**4,949,112**	**4,949,112**
S (ng/L) [2]	**7,328**	**7,328**	**7,328**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**
33-5	*< 0.0089*	*< 0.0089*	*< 0.0081*	*< 0.0082*	*< 0.0082*	*< 0.0082*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.008*	*< 0.0081*	*< 0.0082*	*< 0.0082*	*< 0.0082*
33-6	*< 0.0091*	*< 0.0091*	*< 0.0088*	*< 0.0099*	*< 0.0099*	*< 0.0099*	*< 0.009*	*< 0.009*	*< 0.009*	*< 0.009*	*< 0.0098*	*< 0.0099*	*< 0.0099*	*< 0.0099*
33-7	*< 0.0089*	*< 0.0089*	*< 0.0076*	*< 0.0067*	*< 0.0067*	*< 0.0067*	*< 0.0071*	*< 0.0071*	*< 0.0071*	*< 0.0071*	*< 0.0067*	*< 0.0067*	*< 0.0067*	*< 0.0067*
33-8	*< 0.0072*	*< 0.0072*	*< 0.0064*	*< 0.0059*	*< 0.0059*	*< 0.0059*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.0059*	*< 0.0059*	*< 0.0059*	*< 0.0059*
33-9	*< 0.0091*	*< 0.0091*	*< 0.0082*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*
33-10	*< 0.0063*	*< 0.0063*	*< 0.0058*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.0058*	*< 0.0058*	*< 0.0058*	*< 0.0058*	*< 0.006*	*< 0.006*	*< 0.006*	*< 0.006*
33-12	*< 0.026*	*< 0.026*	*< 0.027*	*< 0.037*	*< 0.037*	*< 0.037*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.03*	*< 0.036*	*< 0.037*	*< 0.037*	*< 0.037*
33-13	*< 0.0088*	*< 0.0088*	*< 0.0085*	*< 0.0096*	*< 0.0096*	*< 0.0096*	*< 0.0087*	*< 0.0087*	*< 0.0087*	*< 0.0087*	*< 0.0095*	*< 0.0096*	*< 0.0096*	*< 0.0096*
33-14	*< 0.0094*	*< 0.0094*	*< 0.0083*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*	*< 0.0079*
33-15	*< 0.012*	*< 0.012*	*< 0.01*	*< 0.0085*	*< 0.0085*	*< 0.0085*	*< 0.0092*	*< 0.0092*	*< 0.0092*	*< 0.0092*	*< 0.0086*	*< 0.0085*	*< 0.0085*	*< 0.0085*
33-16	*< 0.0035*	*< 0.0035*	*< 0.0027*	*< 0.002*	*< 0.002*	*< 0.002*	*< 0.0023*	*< 0.0023*	*< 0.0023*	*< 0.0023*	*< 0.002*	*< 0.002*	*< 0.002*	*< 0.002*
33-17	*< 0.0031*	*< 0.0031*	*< 0.0024*	*< 0.0017*	*< 0.0017*	*< 0.0017*	*< 0.002*	*< 0.002*	*< 0.002*	*< 0.002*	*< 0.0017*	*< 0.0017*	*< 0.0017*	*< 0.0017*
33-18	*< 0.0032*	*< 0.0032*	*< 0.0027*	*< 0.0024*	*< 0.0024*	*< 0.0024*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0024*	*< 0.0024*	*< 0.0024*	*< 0.0024*
33-19	*< 0.0041*	*< 0.0041*	*< 0.0034*	*< 0.0027*	*< 0.0027*	*< 0.0027*	*< 0.003*	*< 0.003*	*< 0.003*	*< 0.003*	*< 0.0028*	*< 0.0027*	*< 0.0027*	*< 0.0027*
33-20	*< 0.0037*	*< 0.0037*	*< 0.003*	*< 0.0023*	*< 0.0023*	*< 0.0023*	*< 0.0026*	*< 0.0026*	*< 0.0026*	*< 0.0026*	*< 0.0024*	*< 0.0023*	*< 0.0023*	*< 0.0023*
33-21	*< 0.0031*	*< 0.0031*	*< 0.0024*	*< 0.0017*	*< 0.0017*	*< 0.0017*	*< 0.0021*	*< 0.0021*	*< 0.0021*	*< 0.0021*	*< 0.0018*	*< 0.0017*	*< 0.0017*	*< 0.0017*
33-22	*< 0.0029*	*< 0.0029*	*< 0.0022*	*< 0.0016*	*< 0.0016*	*< 0.0016*	*< 0.0019*	*< 0.0019*	*< 0.0019*	*< 0.0019*	*< 0.0016*	*< 0.0016*	*< 0.0016*	*< 0.0016*
33-23	*< 0.0025*	*< 0.0025*	*< 0.0021*	*< 0.0018*	*< 0.0018*	*< 0.0018*	*< 0.0019*	*< 0.0019*	*< 0.0019*	*< 0.0019*	*< 0.0018*	*< 0.0018*	*< 0.0018*	*< 0.0018*
33-24	*< 0.0025*	*< 0.0025*	*< 0.002*	*< 0.0014*	*< 0.0014*	*< 0.0014*	*< 0.0017*	*< 0.0017*	*< 0.0017*	*< 0.0017*	*< 0.0014*	*< 0.0014*	*< 0.0014*	*< 0.0014*
33-25	*< 0.003*	*< 0.003*	*< 0.0024*	*< 0.0018*	*< 0.0018*	*< 0.0018*	*< 0.0021*	*< 0.0021*	*< 0.0021*	*< 0.0021*	*< 0.0018*	*< 0.0018*	*< 0.0018*	*< 0.0018*
33-26	*< 0.0025*	*< 0.0025*	*< 0.0021*	*< 0.0016*	*< 0.0016*	*< 0.0016*	*< 0.0018*	*< 0.0018*	*< 0.0018*	*< 0.0018*	*< 0.0016*	*< 0.0016*	*< 0.0016*	*< 0.0016*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)												
Vial ID	**144**	**146 [8]**	**147**	**149 [8]**	**151**	**153 [8]**	**156**	**157**	**158**	**165**	**167**	**169**	**170**
Homolog	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hexa**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**3,931,220**	**4,949,112**	**3,931,220**	**3,931,220**	**3,931,220**	**4,949,112**	**6,375,692**	**6,375,692**	**4,949,112**	**4,949,112**	**6,375,692**	**8,213,482**	**13,630,987**
S (ng/L) [2]	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**1,647**	**367**
33-5	*< 0.008*	*NC*	*< 0.008*	*NC*	*< 0.008*	*NC*	*< 0.0091*	*< 0.0091*	*< 0.0082*	*< 0.0082*	*< 0.0091*	*< 0.011*	*< 0.027*
33-6	*< 0.009*	*NC*	*< 0.009*	*NC*	*< 0.009*	*NC*	*< 0.012*	*< 0.012*	*< 0.0099*	*< 0.0099*	*< 0.012*	*< 0.017*	*NC*
33-7	*< 0.0071*	*NC*	*< 0.0071*	*NC*	*< 0.0071*	*NC*	*< 0.0067*	*< 0.0067*	*< 0.0067*	*< 0.0067*	*< 0.0067*	*< 0.0072*	*< 0.011*
33-8	*< 0.006*	*NC*	*< 0.006*	*NC*	*< 0.006*	*NC*	*< 0.0062*	*< 0.0062*	*< 0.0059*	*< 0.0059*	*< 0.0062*	*< 0.0071*	*< 0.013*
33-9	*< 0.0079*	*NC*	*< 0.0079*	*NC*	*< 0.0079*	*NC*	*< 0.0086*	*< 0.0086*	*< 0.0079*	*< 0.0079*	*< 0.0086*	*< 0.01*	*< 0.022*
33-10	*< 0.0058*	*NC*	*< 0.0058*	*NC*	*< 0.0058*	*NC*	*< 0.0069*	*< 0.0069*	*< 0.006*	*< 0.006*	*< 0.0069*	*< 0.0088*	*< 0.023*
33-12	*< 0.03*	*NC*	*< 0.03*	*NC*	*< 0.03*	*NC*	*< 0.052*	*< 0.052*	*< 0.037*	*< 0.037*	*< 0.052*	*NC*	*NC*
33-13	*< 0.0087*	*NC*	*< 0.0087*	*NC*	*< 0.0087*	*NC*	*< 0.012*	*< 0.012*	*< 0.0096*	*< 0.0096*	*< 0.012*	*< 0.016*	*NC*
33-14	*< 0.0079*	*NC*	*< 0.0079*	*NC*	*< 0.0079*	*NC*	*< 0.0084*	*< 0.0084*	*< 0.0079*	*< 0.0079*	*< 0.0084*	*< 0.0097*	*< 0.019*
33-15	*< 0.0092*	*NC*	*< 0.0092*	*NC*	*< 0.0092*	*NC*	*< 0.0081*	*< 0.0081*	*< 0.0085*	*< 0.0085*	*< 0.0081*	*< 0.0083*	*< 0.011*
33-16	*< 0.0023*	*NC*	*< 0.0023*	*NC*	*< 0.0023*	*NC*	*< 0.0017*	*< 0.0017*	*< 0.002*	*< 0.002*	*< 0.0017*	*< 0.0015*	*< 0.0013*
33-17	*< 0.002*	*NC*	*< 0.002*	*NC*	*< 0.002*	*NC*	*< 0.0014*	*< 0.0014*	*< 0.0017*	*< 0.0017*	*< 0.0014*	*< 0.0012*	*< 0.001*
33-18	*< 0.0025*	*NC*	*< 0.0025*	*NC*	*< 0.0025*	*NC*	*< 0.0024*	*< 0.0024*	*< 0.0024*	*< 0.0024*	*< 0.0024*	*< 0.0026*	*< 0.0042*
33-19	*< 0.003*	*NC*	*< 0.003*	*NC*	*< 0.003*	*NC*	*< 0.0025*	*< 0.0025*	*< 0.0027*	*< 0.0027*	*< 0.0025*	*< 0.0025*	*< 0.0029*
33-20	*< 0.0026*	*NC*	*< 0.0026*	*NC*	*< 0.0026*	*NC*	*< 0.0021*	*< 0.0021*	*< 0.0023*	*< 0.0023*	*< 0.0021*	*< 0.002*	*< 0.0021*
33-21	*< 0.0021*	*NC*	*< 0.0021*	*NC*	*< 0.0021*	*NC*	*< 0.0015*	*< 0.0015*	*< 0.0017*	*< 0.0017*	*< 0.0015*	*< 0.0013*	*< 0.0011*
33-22	*< 0.0019*	*NC*	*< 0.0019*	*NC*	*< 0.0019*	*NC*	*< 0.0013*	*< 0.0013*	*< 0.0016*	*< 0.0016*	*< 0.0013*	*< 0.0011*	*< 0.0009*
33-23	*< 0.0019*	*NC*	*< 0.0019*	*NC*	*< 0.0019*	*NC*	*< 0.0017*	*< 0.0017*	*< 0.0018*	*< 0.0018*	*< 0.0017*	*< 0.0017*	*< 0.0024*
33-24	*< 0.0017*	*NC*	*< 0.0017*	*NC*	*< 0.0017*	*NC*	*< 0.0012*	*< 0.0012*	*< 0.0014*	*< 0.0014*	*< 0.0012*	*< 0.001*	*< 0.00081*
33-25	*< 0.0021*	*NC*	*< 0.0021*	*NC*	*< 0.0021*	*NC*	*< 0.0015*	*< 0.0015*	*< 0.0018*	*< 0.0018*	*< 0.0015*	*< 0.0014*	*< 0.0013*
33-26	*< 0.0018*	*NC*	*< 0.0018*	*NC*	*< 0.0018*	*NC*	*< 0.0015*	*< 0.0015*	*< 0.0016*	*< 0.0016*	*< 0.0015*	*< 0.0014*	*< 0.0016*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)												
Vial ID	**171**	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**	**183 [8]**	**184**	**185**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**
K_{fs} (L/L_{PDMS}) [1]	**11,079,682**	**13,630,987**	**11,079,682**	**11,079,682**	**11,079,682**	**14,273,396**	**11,079,682**	**11,079,682**	**14,273,396**	**13,630,987**	**11,079,682**	**14,273,396**	**11,079,682**
S (ng/L) [2]	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**	**367**
33-5	*< 0.017*	*< 0.027*	*< 0.017*	*< 0.017*	*< 0.017*	*< 0.03*	*< 0.017*	*< 0.017*	*< 0.03*	*< 0.027*	*NC*	*< 0.03*	*< 0.017*
33-6	*< 0.031*	*NC*	*< 0.031*	*< 0.031*	*< 0.031*	*NC*	*< 0.031*	*< 0.031*	*NC*	*NC*	*NC*	*NC*	*< 0.031*
33-7	*< 0.0088*	*< 0.011*	*< 0.0088*	*< 0.0088*	*< 0.0088*	*< 0.012*	*< 0.0088*	*< 0.0088*	*< 0.012*	*< 0.011*	*NC*	*< 0.012*	*< 0.0088*
33-8	*< 0.0097*	*< 0.013*	*< 0.0097*	*< 0.0097*	*< 0.0097*	*< 0.015*	*< 0.0097*	*< 0.0097*	*< 0.015*	*< 0.013*	*NC*	*< 0.015*	*< 0.0097*
33-9	*< 0.015*	*< 0.022*	*< 0.015*	*< 0.015*	*< 0.015*	*< 0.024*	*< 0.015*	*< 0.015*	*< 0.024*	*< 0.022*	*NC*	*< 0.024*	*< 0.015*
33-10	*< 0.014*	*< 0.023*	*< 0.014*	*< 0.014*	*< 0.014*	*< 0.026*	*< 0.014*	*< 0.014*	*< 0.026*	*< 0.023*	*NC*	*< 0.026*	*< 0.014*
33-12	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-13	*< 0.03*	*NC*	*< 0.03*	*< 0.03*	*< 0.03*	*NC*	*< 0.03*	*< 0.03*	*NC*	*NC*	*NC*	*NC*	*< 0.03*
33-14	*< 0.013*	*< 0.019*	*< 0.013*	*< 0.013*	*< 0.013*	*< 0.021*	*< 0.013*	*< 0.013*	*< 0.021*	*< 0.019*	*NC*	*< 0.021*	*< 0.013*
33-15	*< 0.0094*	*< 0.011*	*< 0.0094*	*< 0.0094*	*< 0.0094*	*< 0.012*	*< 0.0094*	*< 0.0094*	*< 0.012*	*< 0.011*	*NC*	*< 0.012*	*< 0.0094*
33-16	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*NC*	*< 0.0013*	*< 0.0013*
33-17	*< 0.0011*	*< 0.001*	*< 0.0011*	*< 0.0011*	*< 0.0011*	*< 0.001*	*< 0.0011*	*< 0.0011*	*< 0.001*	*< 0.001*	*NC*	*< 0.001*	*< 0.0011*
33-18	*< 0.0033*	*< 0.0042*	*< 0.0033*	*< 0.0033*	*< 0.0033*	*< 0.0045*	*< 0.0033*	*< 0.0033*	*< 0.0045*	*< 0.0042*	*NC*	*< 0.0045*	*< 0.0033*
33-19	*< 0.0026*	*< 0.0029*	*< 0.0026*	*< 0.0026*	*< 0.0026*	*< 0.0031*	*< 0.0026*	*< 0.0026*	*< 0.0031*	*< 0.0029*	*NC*	*< 0.0031*	*< 0.0026*
33-20	*< 0.002*	*< 0.0021*	*< 0.002*	*< 0.002*	*< 0.002*	*< 0.0021*	*< 0.002*	*< 0.002*	*< 0.0021*	*< 0.0021*	*NC*	*< 0.0021*	*< 0.002*
33-21	*< 0.0011*	*< 0.0011*	*< 0.0011*	*< 0.0011*	*< 0.0011*	*< 0.001*	*< 0.0011*	*< 0.0011*	*< 0.001*	*< 0.0011*	*NC*	*< 0.001*	*< 0.0011*
33-22	*< 0.00097*	*< 0.0009*	*< 0.00097*	*< 0.00097*	*< 0.00097*	*< 0.00089*	*< 0.00097*	*< 0.00097*	*< 0.00089*	*< 0.0009*	*NC*	*< 0.00089*	*< 0.00097*
33-23	*< 0.002*	*< 0.0024*	*< 0.002*	*< 0.002*	*< 0.002*	*< 0.0025*	*< 0.002*	*< 0.002*	*< 0.0025*	*< 0.0024*	*NC*	*< 0.0025*	*< 0.002*
33-24	*< 0.00087*	*< 0.00081*	*< 0.00087*	*< 0.00087*	*< 0.00087*	*< 0.0008*	*< 0.00087*	*< 0.00087*	*< 0.0008*	*< 0.00081*	*NC*	*< 0.0008*	*< 0.00087*
33-25	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*< 0.0013*	*NC*	*< 0.0013*	*< 0.0013*
33-26	*< 0.0015*	*< 0.0016*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0016*	*< 0.0015*	*< 0.0015*	*< 0.0016*	*< 0.0016*	*NC*	*< 0.0016*	*< 0.0015*

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

	Concentration of PCB Congeners in Sediment Porewater [3] ($ng_{PCB}/L_{Porewater}$)										
Vial ID	**187 [8]**	**189**	**190**	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**
Homolog	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Hepta**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**	**Octa**
K_{fs} (L/L_{PDMS}) [1]	**11,079,682**	**17,160,396**	**13,630,987**	**13,630,987**	**13,630,987**	**37,542,856**	**31,226,788**	**31,226,788**	**41,164,924**	**41,164,924**	**41,164,924**
S (ng/L) [2]	**367**	**367**	**367**	**367**	**367**	**81**	**81**	**81**	**81**	**81**	**81**
33-5	NC	NC	< 0.027	< 0.027	< 0.027	NC	NC	NC	NC	NC	NC
33-6	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
33-7	NC	< 0.017	< 0.011	< 0.011	< 0.011	NC	NC	NC	NC	NC	NC
33-8	NC	< 0.023	< 0.013	< 0.013	< 0.013	NC	NC	NC	NC	NC	NC
33-9	NC	< 0.039	< 0.022	< 0.022	< 0.022	NC	NC	NC	NC	NC	NC
33-10	NC	NC	< 0.023	< 0.023	< 0.023	NC	NC	NC	NC	NC	NC
33-12	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
33-13	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
33-14	NC	< 0.033	< 0.019	< 0.019	< 0.019	NC	NC	NC	NC	NC	NC
33-15	NC	< 0.015	< 0.011	< 0.011	< 0.011	NC	NC	NC	NC	NC	NC
33-16	NC	< 0.0013	< 0.0013	< 0.0013	< 0.0013	< 0.0024	< 0.0019	< 0.0019	< 0.0027	< 0.0027	< 0.0027
33-17	NC	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0015	< 0.0012	< 0.0012	< 0.0017	< 0.0017	< 0.0017
33-18	NC	< 0.0063	< 0.0042	< 0.0042	< 0.0042	NC	NC	NC	NC	NC	NC
33-19	NC	< 0.0036	< 0.0029	< 0.0029	< 0.0029	NC	< 0.012	< 0.012	NC	NC	NC
33-20	NC	< 0.0024	< 0.0021	< 0.0021	< 0.0021	< 0.0087	< 0.0055	< 0.0055	NC	NC	NC
33-21	NC	< 0.001	< 0.0011	< 0.0011	< 0.0011	< 0.0016	< 0.0013	< 0.0013	< 0.0018	< 0.0018	< 0.0018
33-22	NC	< 0.00086	< 0.0009	< 0.0009	< 0.0009	< 0.0012	< 0.001	< 0.001	< 0.0013	< 0.0013	< 0.0013
33-23	NC	< 0.0033	< 0.0024	< 0.0024	< 0.0024	NC	NC	NC	NC	NC	NC
33-24	NC	< 0.00078	< 0.00081	< 0.00081	< 0.00081	< 0.0011	< 0.00092	< 0.00092	< 0.0012	< 0.0012	< 0.0012
33-25	NC	< 0.0014	< 0.0013	< 0.0013	< 0.0013	< 0.0035	< 0.0025	< 0.0025	< 0.0043	< 0.0043	< 0.0043
33-26	NC	< 0.0019	< 0.0016	< 0.0016	< 0.0016	< 0.0085	< 0.005	< 0.005	NC	NC	NC

Table 9. Concentrations of Freely-dissolved PCB Congeners in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Concentration of PCB Congeners in Sediment Porewater [3] (ng $_{PCB}$/L $_{Porewater}$)						
	201	202	203	205	206	207	208
Homolog	**Octa**	**Octa**	**Octa**	**Octa**	**Nona**	**Nona**	**Nona**
K_{fs} (L/L$_{PDMS}$) [1]	**31,226,788**	**41,164,924**	**31,226,788**	**37,542,856**	**84,047,986**	**113,377,614**	**113,377,614**
S (ng/L) [2]	**81**	**81**	**81**	**81**	**18**	**18**	**18**
33-5	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-6	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-7	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-8	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-9	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-10	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-12	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-13	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-14	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-15	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-16	*< 0.0019*	*< 0.0027*	*< 0.0019*	*< 0.0024*	*NC*	*NC*	*NC*
33-17	*< 0.0012*	*< 0.0017*	*< 0.0012*	*< 0.0015*	*NC*	*NC*	*NC*
33-18	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-19	*< 0.012*	*NC*	*< 0.012*	*NC*	*NC*	*NC*	*NC*
33-20	*< 0.0055*	*NC*	*< 0.0055*	*< 0.0087*	*NC*	*NC*	*NC*
33-21	*< 0.0013*	*< 0.0018*	*< 0.0013*	*< 0.0016*	*NC*	*NC*	*NC*
33-22	*< 0.001*	*< 0.0013*	*< 0.001*	*< 0.0012*	*NC*	*NC*	*NC*
33-23	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*	*NC*
33-24	*< 0.00092*	*< 0.0012*	*< 0.00092*	*< 0.0011*	*NC*	*NC*	*NC*
33-25	*< 0.0025*	*< 0.0043*	*< 0.0025*	*< 0.0035*	*NC*	*NC*	*NC*
33-26	*< 0.005*	*NC*	*< 0.005*	*< 0.0085*	*NC*	*NC*	*NC*

Notes:

1 K_{fs} (L/L $_{PDMS}$) is the Fiber PDMS-Solution Water Partition Coefficient (**Table 4**)

2 Approximate solubility limit (S) from **Table 4**.

3 Concentrations of freely dissolved PCBs in sediment porewater are calculated by adjusting the concentration of PCBs in PDMS to reflect concentrations at steady state using model-predicted CFs (**Table 6**), according to the following equation:

$$[PCB\ Congeners_{Sediment\ Porewater}] = \frac{CF \times [PCB\ Congeners_{PDMS}] \times 1{,}000{,}000 \mu L/L}{K_{fs}}$$

4 Concentrations for samples with relationships that are not strong (**Table 7**) and/or negative Log_{10}CF values (**Table 8**) are calculated for demonstration purposes only.

5 NC = Not Calculated.

6 NC results were not calculated because conditions were insufficient to reach 1% of steady state, as described in **Table 8**.

7 PCB congener properties of the less chlorinated congener were used in calculations.

8 PCB congeners 146, 149, 153, 183, and 187 were detected in all three trip blanks. Trip blanks were spiked with four PRCs (PCBs-29, 69, 104, and154) which did not include these congeners. Detection of these congeners is likely spurious and due to either an analytical artifact or contamination in the process. Concentrations of these congeners have not been included in these calculations.

9 Abbreviations:
µL = microliter   ng = nanogram   PDMS = polydimethylsiloxane
L = liter   PCB = polychlorobiphenyl

Table 10. Concentrations of Freely-dissolved PCB Homologs in Sediment Porewater.
SPAWAR Systems Center Pacific
San Diego, California

Vial ID	Sample ID	Station ID	Deployment Type	Concentration of PCB Homologs in Sediment Porewater [1] (ng $_{PCB}$/L $_{Porewater}$)									
				Mono	Di	Tri	Tetra	Penta	Hexa	Hepta	Octa	Nona	Total Tetra-Hexa PCBs [2]
33-5	B33-1-MM-SeaRing	Station1	SeaRing	*< 0.71*	*< 0.28*	*< 0.11*	**0.011**	*< 0.012*	*< 0.011*	*< 0.03*	*NC*	*NC*	**0.011**
33-6	B33-2-MM-SeaRing	Station 2	SeaRing	*< 0.62*	*< 0.25*	*< 0.098*	**0.014**	*< 0.012*	*< 0.017*	*< 0.031*	*NC*	*NC*	**0.014**
33-7	B33-3-MM-SeaRing	Station 3	SeaRing	*< 0.85*	*< 0.33*	*< 0.13*	*< 0.037*	*< 0.013*	*< 0.0072*	*< 0.017*	*NC*	*NC*	*<0.13*
33-8	B33-4-MM-SeaRing	Station 4	SeaRing	*< 0.63*	*< 0.25*	*< 0.098*	*< 0.028*	**0.0044**	*< 0.0071*	*< 0.023*	*NC*	*NC*	**0.0044**
33-9	B33-5-MM-Searing	Station 5	SeaRing	*< 0.76*	*< 0.3*	*< 0.12*	**0.013**	*< 0.013*	*< 0.01*	*< 0.039*	*NC*	*NC*	**0.0**
33-10	B33-6-MM-SeaRing	Station 6	SeaRing	*< 0.48*	*< 0.19*	*< 0.075*	*< 0.022*	*< 0.0086*	*< 0.0088*	*< 0.026*	*NC*	*NC*	*<0.075*
33-12	B33-7-MM-SeaRing	Station 7	SeaRing	*< 1.4*	*< 0.53*	*< 0.21*	*< 0.065*	*< 0.029*	*< 0.052*	*NC*	*NC*	*NC*	*<0.21*
33-13	B33-8-MM-SeaRing	Station 8	SeaRing	*< 0.61*	*< 0.24*	*< 0.094*	**0.023**	*< 0.011*	*< 0.016*	*< 0.03*	*NC*	*NC*	**0.023**
33-14	B33-9-MM-SeaRing	Station 9	SeaRing	*< 0.81*	*< 0.32*	*< 0.13*	**0.052**	*< 0.013*	*< 0.0097*	*< 0.033*	*NC*	*NC*	**0.052**
33-15	B33-10-MM-SeaRing	Station 10	SeaRing	*< 1.2*	*< 0.48*	*< 0.19*	**0.056**	*< 0.019*	*< 0.0092*	*< 0.015*	*NC*	*NC*	**0.056**
33-16	B33-1-MM-Core	Station 1	Core	*< 0.43*	*< 0.17*	*< 0.065*	**0.063**	*< 0.0059*	*< 0.0023*	*< 0.0013*	*< 0.0027*	*NC*	**0.063**
33-17	B33-5-MM-Core	Station 5	Core	*< 0.39*	*< 0.15*	*< 0.059*	**0.021**	*< 0.0053*	*< 0.002*	*< 0.0011*	*< 0.0017*	*NC*	**0.021**
33-18	B33-9-MM-Core	Station 9	Core	*< 0.3*	*< 0.12*	*< 0.046*	**0.012**	*< 0.0048*	*< 0.0026*	*< 0.0063*	*NC*	*NC*	**0.012**
33-19	B33-10-MM-Core	Station 10	Core	*< 0.44*	*< 0.17*	*< 0.068*	**0.018**	*< 0.0065*	*< 0.003*	*< 0.0036*	*< 0.012*	*NC*	**0.018**
33-20	B33-3-MM-Core	Station 3	Core	*< 0.42*	*< 0.17*	*< 0.065*	**0.026**	*< 0.0061*	*< 0.0026*	*< 0.0024*	*< 0.0087*	*NC*	**0.026**
33-21	B33-6B-MM-Core	Station 6	Core	*< 0.39*	*< 0.15*	*< 0.06*	**0.037**	*< 0.0053*	*< 0.0021*	*< 0.0011*	*< 0.0018*	*NC*	**0.037**
33-22	B33-7-MM-Core	Station 7	Core	*< 0.37*	*< 0.14*	*< 0.055*	**0.023**	*< 0.0049*	*< 0.0019*	*< 0.00097*	*< 0.0013*	*NC*	**0.023**
33-23	B33-6A-MM-Core	Station 6	Core	*< 0.25*	*< 0.098*	*< 0.039*	**0.0089**	*< 0.0038*	*< 0.0019*	*< 0.0033*	*NC*	*NC*	**0.0089**
33-24	B33-4-MM-Core	Station 4	Core	*< 0.32*	*< 0.13*	*< 0.049*	**0.007**	*< 0.0043*	*< 0.0017*	*< 0.00087*	*< 0.0012*	*NC*	**0.007**
33-25	B33-2-MM-Core	Station 2	Core	*< 0.36*	*< 0.14*	*< 0.054*	**0.045**	*< 0.005*	*< 0.0021*	*< 0.0014*	*< 0.0043*	*NC*	**0.05**
33-26	B33-8-MM-Core	Station 8	Core	*< 0.28*	*< 0.11*	*< 0.043*	**0.019**	*< 0.0041*	*< 0.0018*	*< 0.0019*	*< 0.0085*	*NC*	**0.019**
Average Method Detection Limit for Non-Detect Results				0.38	0.12	0.05	0.02	0.02	0.01	0.01	0.003	-	-

Notes:

1 The concentration of PCB Homologs in each sample were calculated as the sum of the detected PCB congeners (**Table 9**). If no congeners were detected, the maximum detection limit for the congeners within the homolog group is reported.

2 Total Tetra-Hexa PCBs was calculated as the sum of the detected PCB homologs. If concentrations were non-detect for all homologs, Total Tetra-Hexa PCBs were assumed to be equal to the highest homolog detection limit.

3 All stations are located within the target amendment area.

4 NC results were not calculated because conditions were insufficient to reach 1% of steady state, as described in **Table 8**.

5 Concentrations of PCB-146, 149, 153, 183 and 187 may have been detected erroneously and were not included in these calculations (**Table 5**).

6 Abbreviations:

L = liter ng = nanogram
NC = Not Calculated PCB = polychlorobiphenyl

APPENDIX G RESULTS FOR SEDIMENT ANALYSES

Table 1a. Concentrations of PCBs in Bulk Sediment
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Concentrations in Bulk Sediment (ng/g, dw)								
		Di-CB	Tri-CB	Tetra-CB	Penta-CB	Hexa-CB	Hepta-CB	Octa-CB	Nona-CB	Total PCBs
Baseline	1-MM	< 0.037	0.23	3.17	12.50	9.65	2.64	0.45	0.26	29
Baseline	2-MM	< 0.047	0.65	6.00	17.36	9.20	3.32	2.31	1.06	40
Baseline	3-MM	< 0.03	0.66	2.04	5.69	4.19	3.91	6.56	7.25	30
Baseline	3-MM DUP	< 0.03	0.70	1.13	3.78	2.16	0.70	0.14	0.37	9.0
Baseline	4-MM	< 0.037	0.84	3.20	11.89	11.13	6.12	1.94	0.57	36
Baseline	5-MM	< 0.03	1.78	15.69	41.46	15.69	4.62	2.32	0.52	82
Baseline	6-MM	0.22	8.38	83.63	177.69	66.59	11.94	1.85	0.62	351
Baseline	7-MM	< 0.063	4.29	15.18	33.40	11.69	1.79	0.62	0.34	67
Baseline	8-MM	< 0.033	0.48	5.83	20.93	8.39	4.13	0.86	0.33	41
Baseline	9-MM	0.27	1.84	4.66	67.40	70.07	21.17	3.40	0.76	170
Baseline	10-MM	< 0.03	0.47	8.99	19.73	7.80	2.65	1.07	0.58	41
10-Month	1-MM	< 0.03	0.67	2.94	6.93	3.99	3.02	2.42	0.91	21
10-Month	2-MM	0.54	1.43	4.47	11.32	7.25	2.80	1.35	0.46	30
10-Month	3-MM	< 0.023	0.28	2.07	10.49	12.73	2.86	0.56	0.33	29
10-Month	4-MM	< 0.017	0.04	0.24	0.66	0.79	0.92	0.23	0.03	3
10-Month	5-MM	< 0.013	0.12	2.85	12.78	9.20	1.33	0.09	0.02	26
10-Month	6-MM	< 0.013	0.37	6.19	22.50	16.60	3.32	0.74	0.14	50
10-Month	7-MM	< 0.017	0.04	0.52	1.19	0.45	0.13	< 0.017	< 0.017	2.3
10-Month	7-MM DUP	< 0.013	0.02	0.09	0.29	0.12	0.04	< 0.013	< 0.013	0.57
10-Month	8-MM	< 0.013	0.02	0.13	0.48	0.22	0.13	< 0.013	< 0.013	0.99
10-Month	9-MM	< 0.017	0.05	0.33	0.99	0.87	0.54	0.18	0.05	3.0
10-Month	10-MM	< 0.017	2.14	2.53	3.99	2.47	0.67	0.15	0.06	12

Table 1a. Concentrations of PCBs in Bulk Sediment
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Concentrations in Bulk Sediment (ng/g, dw)								
		Di-CB	Tri-CB	Tetra-CB	Penta-CB	Hexa-CB	Hepta-CB	Octa-CB	Nona-CB	Total PCBs
21-Month	1-MM	< 0.034	0.30	0.65	3.45	1.50	0.77	0.24	0.17	7.1
21-Month	2-MM	< 0.04	3.00	16.86	57.91	19.24	7.01	1.83	0.50	106
21-Month	3-MM	< 0.037	1.18	4.34	11.40	3.40	1.93	0.89	0.38	24
21-Month	4-MM	< 0.027	0.47	1.81	9.32	5.49	3.84	1.36	0.33	23
21-Month	5-MM	< 0.026	0.28	0.95	3.11	1.07	1.20	1.26	0.45	8.3
21-Month	6-MM	< 0.034	0.19	4.05	24.31	10.82	5.83	3.63	0.82	50
21-Month	7-MM	< 0.041	0.38	1.52	3.97	0.88	0.53	0.17	< 0.041	7.4
21-Month	7-MM DUP	< 0.046	2.70	18.78	59.74	15.96	4.42	1.15	0.37	103
21-Month	8-MM	< 0.026	< 0.026	0.05	0.47	0.23	0.18	< 0.026	< 0.026	0.93
21-Month	9-MM	< 0.035	0.55	1.52	7.52	3.77	3.56	1.16	0.28	18
21-Month	10-MM	< 0.031	0.43	1.73	5.67	1.31	1.38	0.23	0.17	11
33-Month	1-MM	< 0.051	< 0.051	1.49	8.14	8.11	4.24	1.62	0.45	24
33-Month	2-MM	< 0.049	0.11	1.31	3.34	2.13	0.58	< 0.049	0.12	7.6
33-Month	3-MM	< 0.054	< 0.054	1.65	10.99	6.89	1.46	0.83	0.46	22
33-Month	4-MM	< 0.054	0.38	2.94	11.49	10.31	10.47	4.63	0.88	41
33-Month	5-MM	< 0.059	< 0.059	0.38	1.47	0.95	0.28	< 0.059	< 0.059	3.1
33-Month	6-MM	< 0.066	3.47	37.54	88.48	57.25	12.04	3.33	1.09	203
33-Month	7-MM	< 0.055	0.27	1.44	3.99	2.19	0.46	< 0.055	0.17	8.5
33-Month	7-MM DUP	< 0.053	0.90	10.08	26.52	17.32	2.75	1.35	1.02	60
33-Month	8-MM	< 0.049	< 0.049	0.67	2.98	2.11	0.82	0.62	0.30	7.5
33-Month	9-MM	< 0.052	0.12	1.40	6.17	6.59	3.40	1.00	0.32	19
33-Month	10-MM	< 0.051	4.80	16.22	18.21	9.15	1.69	0.75	0.34	51

Notes:
1.) Concentrations of Di-, Tri, Tetra-, Penta-, Hexa-, Hepta-, Octa-, and Nona-CBs in sediment were calculated as the sum of the detected congeners. If no congeners in a homolog group were detected, less than (<) the detection limit was shown.
2.) Concentrations of total PCBs in sediment were calculated as the sum of the detected congeners.
3.) Mono-CBs were not detected. Deca-CB was not measured (surrogate).
4.) PCB = polychlorinated biphenyl. CB = chlorinated biphenyl. µg/kg, dw = microgram per kilogram, dry weight.

Table 1b. Concentrations of PCBs in Sediment, Debris Corrected
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Concentrations in Sediment, Debris Corrected (ng/g, dw)								
		Di-CB	Tri-CB	Tetra-CB	Penta-CB	Hexa-CB	Hepta-CB	Octa-CB	Nona-CB	Total PCBs
Baseline	1-MM	Not applicable								
Baseline	2-MM	Not applicable								
Baseline	3-MM	Not applicable								
Baseline	3-MM DUP	Not applicable								
Baseline	4-MM	Not applicable								
Baseline	5-MM	Not applicable								
Baseline	6-MM	Not applicable								
Baseline	7-MM	Not applicable								
Baseline	8-MM	Not applicable								
Baseline	9-MM	Not applicable								
Baseline	10-MM	Not applicable								
10-Month	1-MM	< 0.047	1.05	4.57	10.78	6.20	4.69	3.77	1.41	32
10-Month	2-MM	0.66	1.75	5.46	13.84	8.86	3.43	1.65	0.56	36
10-Month	3-MM	< 0.037	0.43	3.25	16.48	20.01	4.49	0.89	0.53	46
10-Month	4-MM	< 0.04	0.09	0.57	1.57	1.90	2.21	0.54	0.07	7.0
10-Month	5-MM	< 0.037	0.32	7.84	35.15	25.29	3.66	0.25	0.05	73
10-Month	6-MM	< 0.04	1.12	18.56	67.50	49.81	9.97	2.23	0.42	150
10-Month	7-MM	< 0.037	0.09	1.14	2.61	0.99	0.29	< 0.037	< 0.037	5.1
10-Month	7-MM DUP	< 0.05	0.08	0.34	1.11	0.45	0.16	< 0.05	< 0.05	2.1
10-Month	8-MM	< 0.043	0.07	0.42	1.56	0.72	0.43	< 0.043	< 0.043	3.2
10-Month	9-MM	< 0.033	0.10	0.66	1.98	1.74	1.07	0.36	0.10	6.0
10-Month	10-MM	< 0.023	3.00	3.54	5.59	3.46	0.94	0.21	0.08	17

Table 1b. Concentrations of PCBs in Sediment, Debris Corrected
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Concentrations in Sediment, Debris Corrected (ng/g, dw)								
		Di-CB	Tri-CB	Tetra-CB	Penta-CB	Hexa-CB	Hepta-CB	Octa-CB	Nona-CB	Total PCBs
21-Month	1-MM	< 0.05	0.45	0.98	5.19	2.25	1.15	0.35	0.26	11
21-Month	2-MM	< 0.04	3.34	18.76	64.43	21.41	7.80	2.03	0.55	118
21-Month	3-MM	< 0.05	1.69	6.25	16.41	4.89	2.78	1.27	0.54	34
21-Month	4-MM	< 0.05	0.96	3.69	18.98	11.20	7.82	2.78	0.68	46
21-Month	5-MM	< 0.05	0.51	1.75	5.71	1.96	2.19	2.32	0.82	15
21-Month	6-MM	< 0.06	0.35	7.46	44.80	19.95	10.75	6.68	1.51	92
21-Month	7-MM	< 0.08	0.72	2.84	7.43	1.65	0.99	0.31	< 0.08	14
21-Month	7-MM DUP	< 0.06	3.45	23.99	76.30	20.38	5.65	1.47	0.47	132
21-Month	8-MM	< 0.07	< 0.07	0.14	1.25	0.62	0.47	< 0.07	< 0.07	2.5
21-Month	9-MM	< 0.06	0.98	2.69	13.33	6.68	6.31	2.06	0.50	33
21-Month	10-MM	< 0.09	1.21	4.90	16.06	3.71	3.92	0.66	0.47	31
33-Month	1-MM	< 0.072	< 0.072	2.10	11.49	11.34	5.99	2.28	0.63	34
33-Month	2-MM	< 0.09	0.21	2.39	6.10	3.89	1.07	< 0.09	0.22	14
33-Month	3-MM	< 0.091	< 0.091	2.76	18.42	11.54	2.44	1.39	0.77	37
33-Month	4-MM	< 0.095	0.67	5.21	20.40	18.31	18.60	8.21	1.56	73
33-Month	5-MM	< 0.107	< 0.107	0.68	2.66	1.73	0.51	< 0.107	< 0.107	5.6
33-Month	6-MM	< 0.115	6.04	65.42	154.18	99.75	20.97	5.80	1.89	354
33-Month	7-MM	< 0.099	0.49	2.57	7.13	3.91	0.83	< 0.099	0.31	15
33-Month	7-MM DUP	< 0.108	1.83	20.54	54.05	35.29	5.61	2.76	2.08	122
33-Month	8-MM	< 0.102	< 0.102	1.41	6.25	4.43	1.71	1.30	0.63	16
33-Month	9-MM	< 0.13	0.31	3.51	15.53	16.58	8.57	2.51	0.82	48
33-Month	10-MM	< 0.065	6.10	20.62	23.15	11.63	2.15	0.96	0.43	65

Notes:
1.) Fine sediments were retained on a #10 sieve (2 millimeter).
2.) Concentrations of Di-, Tri, Tetra-, Penta-, Hexa-, Hepta-, Octa-, and Nona-CBs in sediment were calculated as the sum of the detected congeners. If no congeners in a homolog group were detected, less than (<) the detection limit was shown.
3.) Concentrations of total PCBs in sediment were calculated as the sum of the detected congeners.
4.) PCB = polychlorinated biphenyl. CB = chlorinated biphenyl. µg/kg, dw = microgram per kilogram, dry weight.

Table 1c. Concentrations of PCBs in Bulk Sediment - OC Normalized
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	TOC Content (%)	Concentrations in Bulk Sediment (ng/g, OC)								
			Di-CB	Tri-CB	Tetra-CB	Penta-CB	Hexa-CB	Hepta-CB	Octa-CB	Nona-CB	Total PCBs
Baseline	1-MM	3.75%	< 0.99	6.1	84	333	257	70	12	6.8	771
Baseline	2-MM	1.53%	< 3.07	42	392	1,135	601	217	151	69	2,608
Baseline	3-MM	1.45%	< 2.08	46	141	394	290	271	454	502	2,097
Baseline	3-MM DUP	1.78%	< 1.68	39	63	212	121	39	7.8	21	503
Baseline	4-MM	5.83%	< 0.63	14	55	204	191	105	33	10	612
Baseline	5-MM	0.95%	< 3.16	187	1,651	4,365	1,652	487	244	55	8,641
Baseline	6-MM	2.23%	10	375	3,745	7,956	2,982	535	83	28	15,713
Baseline	7-MM	2.66%	< 2.37	161	570	1,256	440	67	23	13	2,530
Baseline	8-MM	3.46%	< 0.95	14	168	605	243	119	25	10	1,184
Baseline	9-MM	5.67%	4.8	32	82	1,188	1,235	373	60	13	2,989
Baseline	10-MM	6.01%	< 0.5	7.7	150	328	130	44	18	10	687
10-Month	1-MM	6.32%	< 0.47	11	46	110	63	48	38	14	330
10-Month	2-MM	1.18%	46	121	377	956	612	237	114	38	2,500
10-Month	3-MM	6.26%	< 0.37	4.4	33	168	204	46	9.0	5.3	469
10-Month	4-MM	10.18%	< 0.17	0.37	2.3	6.4	7.8	9.0	2.2	0.28	28
10-Month	5-MM	5.21%	< 0.25	2.2	55	245	176	26	1.7	0.33	506
10-Month	6-MM	8.34%	< 0.16	4.5	74	270	199	40	8.9	1.7	598
10-Month	7-MM	10.49%	< 0.16	0.41	4.9	11	4.3	1.2	< 0.16	< 0.16	22
10-Month	7-MM DUP	10.97%	< 0.12	0.20	0.82	2.7	1.1	0.38	< 0.12	< 0.12	5.2
10-Month	8-MM	9.12%	< 0.14	0.23	1.4	5.3	2.4	1.5	< 0.14	< 0.14	11
10-Month	9-MM	9.61%	< 0.18	0.52	3.4	10	9.1	5.6	1.9	0.55	31
10-Month	10-MM	4.24%	< 0.4	51	60	94	58	16	3.6	1.4	283

Table 1c. Concentrations of PCBs in Bulk Sediment - OC Normalized
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	TOC Content (%)	Concentrations in Bulk Sediment (ng/g, OC)								
			Di-CB	Tri-CB	Tetra-CB	Penta-CB	Hexa-CB	Hepta-CB	Octa-CB	Nona-CB	Total PCBs
21-Month	1-MM	10.97%	< 0.31	2.7	5.9	31	14	7.0	2.1	1.5	64
21-Month	2-MM	2.97%	< 1.35	101	568	1,952	649	236	62	17	3,585
21-Month	3-MM	2.10%	< 1.76	56	207	543	162	92	42	18	1,120
21-Month	4-MM	5.47%	< 0.49	8.6	33	170	101	70	25	6.1	414
21-Month	5-MM	7.65%	< 0.34	3.7	12	41	14	16	17	5.9	109
21-Month	6-MM	2.40%	< 1.42	7.9	169	1,013	451	243	151	34	2,069
21-Month	7-MM	3.73%	< 1.1	10	41	106	24	14	4.5	< 1.1	199
21-Month	7-MM DUP	4.17%	< 1.1	65	451	1,434	383	106	28	8.8	2,475
21-Month	8-MM	4.27%	< 0.61	< 0.61	1.2	11	5.4	4.2	< 0.61	< 0.61	22
21-Month	9-MM	8.17%	< 0.43	6.8	19	92	46	44	14	3.4	225
21-Month	10-MM	2.57%	< 1.21	17	67	221	51	54	9.1	6.5	426
33-Month	1-MM	1.68%	< 3.03	< 3.03	89	483	482	252	96	27	1,428
33-Month	2-MM	2.04%	< 2.4	5.5	64	163	104	29	< 2.4	5.8	372
33-Month	3-MM	2.53%	< 2.14	< 2.14	65	435	273	58	33	18	881
33-Month	4-MM	4.87%	< 1.11	7.7	60	236	212	215	95	18	844
33-Month	5-MM	3.56%	< 1.66	< 1.66	11	41	27	7.9	< 1.66	< 1.66	86
33-Month	6-MM	5.82%	< 1.13	60	645	1,520	984	207	57	19	3,491
33-Month	7-MM	10.01%	< 0.55	2.7	14	40	22	4.6	< 0.55	1.7	85
33-Month	7-MM DUP	5.60%	< 0.95	16	180	474	309	49	24	18	1,071
33-Month	8-MM	8.20%	< 0.6	< 0.6	8.2	36	26	10	7.6	3.6	91
33-Month	9-MM	2.64%	< 1.97	4.7	53	234	250	129	38	12	720
33-Month	10-MM	2.34%	< 2.18	205	692	777	390	72	32	14	2,184

Notes:
1.) TOC Content is the average of the 0-2 inch, 2-4 inch and 4-6 inch intervals.
2.) Concentrations of total PCBs in sediment were calculated as the sum of the detected congeners.
3.) PCB = polychlorinated biphenyl. CB = chlorinated biphenyl. µg/kg, dw = microgram per kilogram, dry weight. TOC = total organic carbon.

Table 1d. Concentrations of PCBs in Sediment, Debris Corrected - OC Normalized
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	TOC Content (%)	Concentrations in Sediment, Debris Corrected (ng/g, OC)								
			Di-CB	Tri-CB	Tetra-CB	Penta-CB	Hexa-CB	Hepta-CB	Octa-CB	Nona-CB	Total PCBs
Baseline	1-MM	3.75%	Not applicable								
Baseline	2-MM	1.53%	Not applicable								
Baseline	3-MM	1.45%	Not applicable								
Baseline	3-MM DUP	1.78%	Not applicable								
Baseline	4-MM	5.83%	Not applicable								
Baseline	5-MM	0.95%	Not applicable								
Baseline	6-MM	2.23%	Not applicable								
Baseline	7-MM	2.66%	Not applicable								
Baseline	8-MM	3.46%	Not applicable								
Baseline	9-MM	5.67%	Not applicable								
Baseline	10-MM	6.01%	Not applicable								
10-Month	1-MM	6.32%	< 1.25	28	122	287	165	125	100	38	866
10-Month	2-MM	1.18%	43	114	357	904	579	224	108	36	2,366
10-Month	3-MM	6.26%	< 2.56	30	225	1,141	1,385	311	61	36	3,189
10-Month	4-MM	10.18%	< 2.24	5.1	32	88	106	124	30	3.8	390
10-Month	5-MM	5.21%	< 0.63	5.5	134	603	434	63	4.2	0.80	1,244
10-Month	6-MM	8.34%	< 4.21	118	1,954	7,105	5,243	1,050	235	44	15,748
10-Month	7-MM	10.49%	< 1.66	4.2	51	117	44	13	< 1.66	< 1.66	229
10-Month	7-MM DUP	10.97%	< 1.88	3.2	13	42	17	5.9	< 1.88	< 1.88	80
10-Month	8-MM	9.12%	< 1.24	2.0	12	45	21	12	< 1.24	< 1.24	93
10-Month	9-MM	9.61%	< 0.58	1.8	12	35	31	19	6.4	1.8	106
10-Month	10-MM	4.24%	< 0.38	50	59	93	58	16	3.6	1.4	280

Table 1d. Concentrations of PCBs in Sediment, Debris Corrected - OC Normalized
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	TOC Content (%)	Concentrations in Sediment, Debris Corrected (ng/g, OC)								
			Di-CB	Tri-CB	Tetra-CB	Penta-CB	Hexa-CB	Hepta-CB	Octa-CB	Nona-CB	Total PCBs
21-Month	1-MM	10.97%	< 0.79	7.1	16	82	36	18	5.6	4.0	168
21-Month	2-MM	2.97%	< 3.38	282	1,583	5,438	1,807	659	172	47	9,987
21-Month	3-MM	2.10%	< 0.8	27	100	262	78	44	20	8.7	541
21-Month	4-MM	5.47%	< 0.49	9.4	36	186	110	77	27	6.6	453
21-Month	5-MM	7.65%	< 0.96	10	33	109	38	42	44	16	293
21-Month	6-MM	2.40%	< 0.72	4.2	89	537	239	129	80	18	1,097
21-Month	7-MM	3.73%	< 0.76	6.8	27	71	16	9.5	3.0	< 0.76	133
21-Month	7-MM DUP	4.17%	< 0.55	31	219	696	186	51	13	4.3	1,201
21-Month	8-MM	4.27%	< 0.77	< 0.77	1.6	14	6.8	5.2	< 0.77	< 0.77	27
21-Month	9-MM	8.17%	< 0.62	10	28	139	69	66	21	5.2	339
21-Month	10-MM	2.57%	< 2.12	28	116	379	87	92	16	11	729
33-Month	1-MM	1.68%	< 0.66	< 0.66	19	105	103	55	21	5.8	309
33-Month	2-MM	2.04%	< 3.03	6.9	81	206	131	36	< 3.03	7.3	468
33-Month	3-MM	2.53%	< 4.33	< 4.33	131	877	550	116	66	37	1,777
33-Month	4-MM	4.87%	< 1.74	12	95	373	335	340	150	28	1,335
33-Month	5-MM	3.56%	< 1.4	< 1.4	8.9	35	23	6.6	< 1.4	< 1.4	73
33-Month	6-MM	5.82%	< 4.79	252	2,726	6,424	4,156	874	242	79	14,752
33-Month	7-MM	10.01%	< 2.65	13	69	191	105	22	< 2.65	8.3	408
33-Month	7-MM DUP	5.60%	< 2.59	44	493	1,297	847	135	66	50	2,932
33-Month	8-MM	8.20%	< 2.39	< 2.39	33	147	104	40	30	15	369
33-Month	9-MM	2.64%	< 1.59	3.8	43	190	203	105	31	10	586
33-Month	10-MM	2.34%	< 2.53	238	803	902	453	84	37	17	2,534

Notes:
1.) Fine sediments were retained on a #10 sieve (2 millimeter).
2.) TOC Content is the average of the 0-2 inch, 2-4 inch and 4-6 inch intervals.
3.) Concentrations of Di-, Tri, Tetra-, Penta-, Hexa-, Hepta-, Octa-, and Nona-CBs in sediment were calculated as the sum of the detected congeners. If no congeners in a homolog group were detected, less than (<) the detection limit was shown.
4.) Concentrations of total PCBs in sediment were calculated as the sum of the detected congeners.
5.) PCB = polychlorinated biphenyl. CB = chlorinated biphenyl. µg/kg, dw = microgram per kilogram, dry weight. TOC = total organic carbon.

Table 1e. Concentrations of PCBs Congeners in Sediment - Baseline
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Units = ng/g

cannot be resolved due to co-elutions on both columns

			Surrogates																	
SAMPLE ID	**RL**	**MDL**	**TMX**	**209**	**1**	**3**	**5**	**6**	**7**	**8**	**9**	**12**	**13**	**14**	**15/16**	**17**	**18**	**19**	**20**	**22**
B1 MM Chem	0.11	0.037	89.6	129	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B2 MM Chem	0.14	0.047	85.1	67.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
B3 MM Chem	0.09	0.030	92.3	164.6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.131	N.D.		N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.339	N.D.		N.D.		N.D.
B3 MM Chem dup	0.09	0.030	82.5	90.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.102	N.D.	N.D.	N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.374	N.D.		N.D.	N.D.	N.D.
B4 MM chem	0.11	0.037	85.5	76.8	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.467	N.D.	N.D.	N.D.		N.D.
B5 MM Chem	0.09	0.030	73.1	51.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6 MM Chem	0.13	0.043	85.4	60.1	N.D.	N.D.	N.D.	0.219	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	0.589		N.D.
					N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	0.628	N.D.	N.D.			N.D.
B7 MM Chem	0.19	0.063	79.4	47.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	0.626	N.D.		N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.78	N.D.		N.D.		N.D.
B8 MM Chem	0.1	0.033	85.6	79.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MM chem	0.13	0.043	80.1	44.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.273		N.D.	0.692	N.D.		N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.397	N.D.		N.D.		N.D.
B10 MM Chem	0.09	0.030	86.9	94.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
BLK	0.07		36.2	79.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec			81	87.5			77.5										103.5			
MS %Rec			80.5	68			86.2										96.3			
MSD %Rec			84	72.5			91.8										95.7			

Table 1e. Concentrations of PCBs Congeners in Sediment - Baseline
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

SAMPLE ID	24	25	26	27	28/31	29	32	33	34	35	37	40	41	42	44	45	46	47	48
B1 MM Chem	N.D.	N.D.	N.D.	N.D.	0.23	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.099	N.D.	N.D.	N.D.		
	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	0.177	0.174
B2 MM Chem	N.D.	N.D.	N.D.	N.D.	0.649	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	0.127	N.D.	N.D.	N.D.		
	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	0.199	0.354
B3 MM Chem	N.D.	N.D.	N.D.	N.D.	0.189	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.079	0.134
B3 MM Chem dup	0.121	N.D.	N.D.	N.D.	0.098	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MM chem	N.D.	N.D.	N.D.	N.D.	0.369	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.133	N.D.	N.D.	N.D.		
	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	0.095	0.327
B5 MM Chem	N.D.	0.106	0.395	0.574	0.705	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	0.316	N.D.	N.D.	0.135		
	N.D.					N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		0.547	0.185
B6 MM Chem	N.D.	3.183	N.D.		3.139	N.D.	0.838		N.D.	N.D.	N.D.	N.D.	N.D.	2.224	N.D.	1.114	1.123		
	N.D.		N.D.			N.D.			N.D.	N.D.	N.D.	N.D.	N.D.		N.D.			4.082	1.641
B7 MM Chem	N.D.	0.405	1.051	0.671	0.76	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.247	N.D.	N.D.	0.192		N.D.
	N.D.					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		0.535	N.D.
B8 MM Chem	N.D.	N.D.	N.D.	N.D.	0.484	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B9 MM chem	N.D.	N.D.	N.D.	N.D.	0.374	N.D.	N.D.	N.D.	N.D.	N.D.	0.377	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B10 MM Chem	N.D.	N.D.	N.D.		0.465	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		
	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.363	0.473
BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec					116										100				
MS %Rec					94.3										90.2				
MSD %Rec					93.4										96.7				

Table 1e. Concentrations of PCBs Congeners in Sediment - Baseline
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

SAMPLE ID	49	51	52	53	54	56	59	60	63	64	66	67	69	70	71	73	74	75	77
B1 MM Chem	0.423	N.D.	0.899	N.D.	N.D.		N.D.	N.D.	N.D.	0.096		N.D.	N.D.	0.722	0.091	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	0.118	N.D.	N.D.	N.D.		0.369	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.
B2 MM Chem	0.809	0.107	1.698	N.D.	N.D.		N.D.	N.D.	N.D.	0.19		N.D.	N.D.	1.266	0.232	N.D.	N.D.		N.D.
				N.D.	N.D.	0.145	N.D.	N.D.	N.D.		0.686	N.D.	N.D.			N.D.	N.D.	0.184	N.D.
B3 MM Chem	0.267	N.D.	0.667	N.D.	N.D.	N.D.	N.D.		N.D.	0.109		N.D.	0.124	0.33	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.	N.D.	0.141	N.D.		0.186	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.
B3 MM Chem dup	0.183	N.D.	0.381	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	0.247	N.D.	N.D.	0.069	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.	N.D.	0.133	N.D.	N.D.	0.119	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.
B4 MM chem	0.392	N.D.	0.726	N.D.	N.D.		N.D.	N.D.	N.D.	0.127		N.D.	N.D.	0.434	0.142	N.D.	0.12		N.D.
		N.D.		N.D.	N.D.	0.146	N.D.	N.D.	N.D.		0.421	N.D.	N.D.			N.D.		0.14	N.D.
B5 MM Chem	2.306	N.D.	4.501		N.D.		N.D.	N.D.	N.D.	0.658		N.D.	0.244	3.566	0.901	N.D.	N.D.		N.D.
		N.D.			N.D.	0.391	N.D.	N.D.	N.D.		1.572	N.D.				N.D.	N.D.	0.367	N.D.
B6 MM Chem	13.479	0.974	23.867		N.D.		N.D.		0.345	2.652		0.1	0.182	14.278	4.111	N.D.	0.89		N.D.
					N.D.	1.597	N.D.	0.493			8.792					N.D.		1.687	N.D.
B7 MM Chem	2.323	N.D.	5.651		N.D.		N.D.		N.D.	0.561		N.D.	0.22	2.632	0.905	N.D.	N.D.		N.D.
		N.D.			N.D.	0.311	N.D.	0.124	N.D.		1.356	N.D.				N.D.	N.D.	0.118	N.D.
B8 MM Chem	0.832	N.D.	1.888	N.D.	N.D.		N.D.	N.D.	N.D.	0.124		N.D.	0.614	1.492	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	0.305	N.D.	N.D.	N.D.		0.571	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.
B9 MM chem	0.407	N.D.	0.631	N.D.	N.D.		N.D.		N.D.	N.D.		N.D.	N.D.	1.285	0.272	N.D.	N.D.		N.D.
		N.D.		N.D.	N.D.	0.199	N.D.	0.194	N.D.	N.D.	1.398	N.D.	N.D.			N.D.	N.D.	0.274	N.D.
B10 MM Chem	1.688	N.D.	3.294		N.D.		0.432		N.D.	0.206		N.D.	0.199	1.163	0.258	N.D.	N.D.	N.D.	N.D.
		N.D.			N.D.	0.234		0.108	N.D.		0.574	N.D.				N.D.	N.D.	N.D.	N.D.
BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec			105								84.5								
MS %Rec			87.8								97.7								
MSD %Rec			87.1								93.3								

Table 1e. Concentrations of PCBs Congeners in Sediment - Baseline
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

SAMPLE ID	81/87	82	83	84	85	90/101	91	92	93	95	97	99	100	103	104	105	107	110	114
B1 MM Chem	1.426	0.156	0.112		0.242		0.247		N.D.		0.631	0.943	N.D.	N.D.	0.075			2.014	N.D.
				0.562		1.98		0.373	N.D.	1.376			N.D.	N.D.		0.425	0.318		N.D.
B2 MM Chem	1.935	0.338	0.139		0.315		0.432		0.091		1.146	1.159	N.D.	N.D.	N.D.			2.571	N.D.
				1.577		2.639		0.466		1.792			N.D.	N.D.	N.D.	0.544	0.353		N.D.
B3 MM Chem	0.571	0.102	0.057		0.106		0.151		N.D.		0.338	0.382	N.D.	N.D.	N.D.			0.904	N.D.
				0.384		0.898		0.182	N.D.	0.648			N.D.	N.D.	N.D.	0.157	0.171		N.D.
B3 MM Chem dup	0.437	0.075	N.D.		0.07		0.103		N.D.		0.216	0.243	N.D.	N.D.	N.D.			0.557	N.D.
			N.D.	0.279		0.576		0.102	N.D.	0.422			N.D.	N.D.	N.D.	0.102	0.158		N.D.
B4 MM chem	1.044	0.176	0.148		0.242		0.253		N.D.		0.781	0.841	N.D.	N.D.	N.D.			1.926	N.D.
				1.059		1.761		0.34	N.D.	1.554			N.D.	N.D.	N.D.	0.352	0.219		N.D.
B5 MM Chem	5.02	0.664	0.379		0.876		1.033		N.D.		2.273	2.868	N.D.	N.D.	N.D.			6.684	
				2.389		5.909		1.161	N.D.	4.998			N.D.	N.D.	N.D.	1.519	0.592		0.077
B6 MM Chem	19.635	2.255	1.411		3.3		4.816		0.848		8.272	12.847	0.103	N.D.	N.D.			29.087	
				11.843		25.234		5.09		22.652				N.D.	N.D.	6.556	1.589		0.388
B7 MM Chem	3.909	0.354	0.23		0.591		0.86		0.167		2.049	1.981	N.D.	N.D.	N.D.			5.224	N.D.
				3.009		4.872		0.867		4.619			N.D.	N.D.	N.D.	1.019	0.423		N.D.
B8 MM Chem	2.458	0.408	0.182		0.396		0.487		0.08		0.835	1.431	0.662	N.D.	1.105			3.222	
				1.428		2.412		0.454		2.006				N.D.		0.483	0.29		0.029
B9 MM chem	8.749	1.233	0.516		1.488		0.781		0.13		3.232	4.417	N.D.	N.D.	N.D.			9.143	
				3.063		10.046		1.967		3.329			N.D.	N.D.	N.D.	4.407	1.649		0.333
B10 MM Chem	2.064	0.39	0.175		0.352		0.488		0.076		0.852	1.238	N.D.	N.D.	1.894			2.939	N.D.
				1.543		2.211		0.431		2.302			N.D.	N.D.		0.395	0.166		N.D.
BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec	98					95												83	
MS %Rec	102					70.2												83.3	
MSD %Rec	108					90.5												86.3	

Table 1e. Concentrations of PCBs Congeners in Sediment - Baseline
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

SAMPLE ID	115	117	118	119	122	123	124	128	129	130	131	132	134	135	136	137	138	141	144
B1 MM Chem	N.D.	0.056	1.457	0.108	N.D.	N.D.	N.D.	0.423	1.209	0.136			N.D.		0.342	0.146	2.416	0.309	
	N.D.				N.D.	N.D.	N.D.						N.D.	0.214					0.093
B2 MM Chem	N.D.	N.D.	1.729	0.133	N.D.	N.D.	N.D.	0.361	1.238	N.D.	N.D.		N.D.	N.D.	0.455	N.D.	2.158	0.301	N.D.
	N.D.	N.D.			N.D.	N.D.	N.D.			N.D.	N.D.		N.D.	N.D.		N.D.			N.D.
B3 MM Chem	N.D.	N.D.	0.593	0.049	N.D.	N.D.	N.D.	0.113	N.D.	N.D.	N.D.		N.D.	N.D.	0.179	N.D.	0.854	0.218	N.D.
	N.D.	N.D.			N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.			N.D.
B3 MM Chem dup	N.D.	N.D.	0.435	N.D.	N.D.	N.D.	N.D.	0.08	N.D.	N.D.	N.D.		N.D.	N.D.	0.104	N.D.	0.489	0.077	N.D.
	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.			N.D.
B4 MM chem	0.082	N.D.	1.032	0.076	N.D.	N.D.	N.D.	0.334	N.D.	0.127	N.D.		N.D.		1.123	N.D.	2.825	0.398	
		N.D.			N.D.	N.D.	N.D.		N.D.		N.D.		N.D.	0.299		N.D.			0.102
B5 MM Chem	0.09	0.157	4.385	0.232	N.D.	N.D.	0.157	0.894	N.D.	0.259					0.718	0.307	3.866	0.541	
					N.D.	N.D.			N.D.				0.257	0.536					0.159
B6 MM Chem	0.479	N.D.	19.245	0.994	N.D.		0.678	3.761	0.974	0.965			1.232		2.64	0.995	14.689	2.534	
		N.D.			N.D.	0.368								2.048					0.804
B7 MM Chem	N.D.	N.D.	3.077	0.152	N.D.	N.D.	N.D.	0.488	N.D.	0.125			N.D.		0.597	0.129	4.311	N.D.	N.D.
	N.D.	N.D.			N.D.	N.D.	N.D.		N.D.				N.D.	0.349				N.D.	N.D.
B8 MM Chem	0.046	0.064	2.282	0.106	N.D.	N.D.	0.064	0.484	N.D.	N.D.			N.D.		1.16	N.D.	2.445	N.D.	
					N.D.	N.D.			N.D.	N.D.			N.D.	0.271		N.D.		N.D.	0.06
B9 MM chem	0.214	N.D.	11.694	0.291	N.D.		0.492	3.812	N.D.	1.015			1.062		1.583	1.41	16.036	3.658	
		N.D.			N.D.	0.228			N.D.					2.399					0.739
B10 MM Chem	0.072	0.065	1.961	0.119	N.D.	N.D.	N.D.	0.36	N.D.	N.D.	N.D.		N.D.		0.651	0.062	2.322	N.D.	
					N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	0.245				N.D.	0.081
BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec																	103	97.5	
MS %Rec																	78.6	89.0	
MSD %Rec																	91.4	90.8	

Table 1e. Concentrations of PCBs Congeners in Sediment - Baseline
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

SAMPLE ID	146	147/149	151	153	154	156	157	158	163/164	165	167/185	170	171	172	173	174	175	176	177
B1 MM Chem	0.343		0.343		N.D.		0.099		0.573	N.D.	0.119		N.D.	N.D.		0.325	N.D.	N.D.	0.186
		1.191		1.605	N.D.			0.212		N.D.		0.326	N.D.	N.D.	0.057		N.D.	N.D.	
B2 MM Chem	0.302		0.431			N.D.	0.287		0.392	N.D.	0.11		N.D.	N.D.	N.D.	0.419	N.D.	N.D.	0.136
		1.317		1.393	0.422	N.D.		0.145		N.D.		0.729	N.D.	N.D.	N.D.		N.D.	N.D.	
B3 MM Chem	0.154		0.221			N.D.	0.543		0.233	N.D.	0.09		0.087	N.D.		0.421	N.D.	N.D.	0.185
		0.614		0.795	0.195	N.D.		0.069		N.D.		0.455		N.D.	0.069		N.D.	N.D.	
B3 MM Chem dup	0.077		0.107			N.D.	N.D.	N.D.	0.19	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.389		0.385	0.262	N.D.	N.D.	N.D.		N.D.	N.D.	0.263	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4 MM chem	0.379		0.536				0.109	N.D.	0.666	N.D.	0.168		0.15	0.122		0.651	N.D.	N.D.	0.293
		1.92		2.008	0.305			N.D.		N.D.		0.779			0.127		N.D.	N.D.	
B5 MM Chem	0.479		0.614			N.D.	0.208		0.852	N.D.	0.205		0.138	0.096	N.D.	0.519	N.D.	N.D.	0.201
		2.506		2.73	0.389	N.D.		0.379		N.D.		0.672			N.D.		N.D.	N.D.	
B6 MM Chem	1.934		2.137				0.538		4.246	N.D.	0.795		0.485	0.24		1.574	N.D.	N.D.	0.633
		10.283		13.746	0.763			2.302		N.D.		2.198			0.301		N.D.	N.D.	
B7 MM Chem	0.329		0.44		N.D.	N.D.	0.118		0.684	N.D.	0.116	N.D.	N.D.	N.D.	N.D.	0.366	N.D.	N.D.	N.D.
		2.17		1.711	N.D.	N.D.		0.24		N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.
B8 MM Chem	0.486		0.493				0.089		0.159	N.D.	0.177		0.711	N.D.		N.D.	N.D.	N.D.	N.D.
		1.294		1.218	0.063			0.172		N.D.		0.303		N.D.	0.429	N.D.	N.D.	N.D.	N.D.
B9 MM chem	2.319		2.279				0.692		6.295	N.D.	1.145		0.754	0.483		2.699	N.D.	N.D.	1.22
		10.047		13.74	0.582			2.403		N.D.		3.041			0.686		N.D.	N.D.	
B10 MM Chem	0.319		0.426				0.135		0.876	N.D.	0.099		0.104	N.D.		N.D.	N.D.	N.D.	0.158
		0.945		1.018	0.224			0.131		N.D.		0.35		N.D.	0.167	N.D.	N.D.	N.D.	
BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec			97	108								89							
MS %Rec			81.3	89.1								91.1							
MSD %Rec			86.7	85.9								97.7							

Table 1e. Concentrations of PCBs Congeners in Sediment - Baseline
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

SAMPLE ID	178	179	180/193	183	187	189	190	191	194	195	196	197	199	200	201	202	203	205	206
B1 MM Chem	N.D.	0.138	0.748	0.218	0.467	N.D.		N.D.	0.122	N.D.		N.D.	0.189	N.D.	N.D.	N.D.		N.D.	0.136
	N.D.					N.D.	0.059	N.D.		N.D.	0.056	N.D.		N.D.	N.D.	N.D.	0.08	N.D.	
B2 MM Chem	N.D.	0.12	0.77	0.254	0.784	N.D.	N.D.	N.D.	0.578			0.077	0.657	N.D.	0.102	0.11		N.D.	0.718
	N.D.					N.D.	N.D.	N.D.		0.11	0.253			N.D.			0.426	N.D.	
B3 MM Chem	0.162	0.158	0.975	0.328	0.921	N.D.		N.D.	0.68			0.21	2.411	0.544	0.129	0.851		N.D.	4.578
						N.D.	0.063	N.D.		0.093	0.588						1.051	N.D.	
B3 MM Chem dup	N.D.	N.D.	0.219	0.061	0.153	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.139	N.D.	N.D.	N.D.	N.D.	N.D.	0.232
	N.D.	N.D.				N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
B4 MM chem	0.143	0.422	1.221	0.463	1.303	N.D.		0.206	0.352			0.12	0.485	0.123	0.092	0.123		N.D.	0.329
						N.D.	0.075			0.107	0.236						0.298	N.D.	
B5 MM Chem	0.097	0.268	1.042	0.387	0.932	N.D.		N.D.	0.439			0.096	0.652	0.208	0.099	0.171		N.D.	0.303
						N.D.	0.065	N.D.		0.078	0.254						0.324	N.D.	
B6 MM Chem	N.D.	0.432	2.521	0.868	1.512	N.D.		0.093	0.411			N.D.	0.554	N.D.	0.088	N.D.		N.D.	0.338
	N.D.					N.D.	0.289			0.134	0.265	N.D.		N.D.		N.D.	0.397	N.D.	
B7 MM Chem	0.051	N.D.	0.487	0.15	0.617	N.D.	N.D.	N.D.	0.119			0.044	0.15	N.D.	0.06	N.D.		N.D.	0.179
		N.D.				N.D.	N.D.	N.D.		0.03	0.107			N.D.		N.D.	0.108	N.D.	
B8 MM Chem	N.D.	0.246	1.142	0.435	0.656	N.D.		N.D.	0.211			0.068	0.321	N.D.	N.D.	N.D.		N.D.	0.18
	N.D.					N.D.	0.03	N.D.		0.032	0.088			N.D.	N.D.	N.D.	0.143	N.D.	
B9 MM chem	0.42	1.231	4.894	1.379	2.767	N.D.		N.D.	0.599			N.D.	0.973	N.D.	0.176	0.315		N.D.	0.307
						N.D.	0.449	N.D.		0.233	0.438	N.D.		N.D.			0.668	N.D.	
B10 MM Chem	N.D.	0.168	0.66	0.247	0.692	N.D.	N.D.	N.D.	0.205			0.066	0.412	N.D.	0.076	N.D.		N.D.	0.387
	N.D.					N.D.	N.D.	N.D.		0.047	0.101			N.D.		N.D.	0.162	N.D.	
BLK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec			107.5	80.5	98.5														89
MS %Rec			76.6	80.6	83.1														60.5
MSD %Rec			72.9	75.6	76.2														60

Table 1e. Concentrations of PCBs Congeners in Sediment - Baseline
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

SAMPLE ID	207	208
B1 MM Chem	N.D.	0.119
	N.D.	
B2 MM Chem	N.D.	0.342
	N.D.	
B3 MM Chem	0.635	2.039
B3 MM Chem dup	N.D.	0.141
	N.D.	
B4 MM chem	N.D.	0.241
	N.D.	
B5 MM Chem	N.D.	0.217
	N.D.	
B6 MM Chem	N.D.	0.28
	N.D.	
B7 MM Chem	N.D.	0.163
	N.D.	
B8 MM Chem	N.D.	0.154
	N.D.	
B9 MM chem	N.D.	0.45
	N.D.	
B10 MM Chem	N.D.	0.191
	N.D.	
BLK	N.D.	N.D.
BS %Rec		
MS %Rec		
MSD %Rec		

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Total Mass of PCBs from bulk sediment sample

Units = ng

(shaded) cannot be resolved due to multiple co-elutions

Station	Sample ID	RL	%REC TMX	%REC 209	1	3	5	6	7	8	9	12/13	14	15/16	17	18	19	20	22
1	B12 1 MM	1		74.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
			38.5		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	2.577	N.D.	N.D.	N.D.	N.D.	N.D.
2	B12 2 MM	1.0		60.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	6.025	N.D.			1.540	N.D.		0.854
			38.6		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	2.630	1.610		N.D.		
3	B12 3 MM	1.0		73.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
			40.4		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
4	B12 4 MM	1.0			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			44.4	79.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
5	B12 5 MM	1.0			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
			40.9	72.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
6	B12 6 MM	1.0			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.736	N.D.	N.D.	N.D.
			39.4	72.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.626		N.D.	N.D.	N.D.
7	B12 7 MM	1.0			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			40.5	63.4	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B12 7 MM DUP	1.0			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			34.5	60.9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	1.0			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			39.0	62.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B12 9 MM	1.0			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
			41.4	77.3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
10	B12 10 MM	1	63	82.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			13.300	N.D.		N.D.
					N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	13.600	3.510		N.D.		N.D.
B			69.5	79.5															
BS %rec			72.5	70.5			90									74			
MS %rec			39.5	54.5			79.7									70.6			
MSD %rec			30.3	55.5			77.8									70.8			

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Total Mass of PCBs from bulk sediment sample

Station	Sample ID	24/27	25	26	28/31	29	32	33	34	35	37	40	41	42	44	45	46	47	48	49
1	B12 1 MM	N.D.	N.D.	N.D.	3.090	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	2.045	N.D.	N.D.	N.D.	N.D.	2.634
		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	1.828	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
2	B12 2 MM	0.860	0.912	0.718	3.800	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.			5.036	N.D.	N.D.			6.199
						N.D.	N.D.	N.D.	N.D.	N.D.	2.971	N.D.	0.609	1.423		N.D.	N.D.	2.377	1.206	
3	B12 3 MM	N.D.	N.D.	N.D.	2.156	N.D.	N.D.		N.D.	N.D.		N.D.			3.026	N.D.	N.D.		N.D.	3.484
		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	1.785	N.D.	0.780	0.773		N.D.	N.D.	1.017	N.D.	
4	B12 4 MM	N.D.	N.D.	N.D.	0.754	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.536
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
5	B12 5 MM	N.D.	N.D.	0.406	0.718	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		2.626	N.D.	N.D.			5.502
		N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	1.787	N.D.	N.D.	0.628		N.D.	N.D.	2.283	0.354	
6	B12 6 MM	N.D.	0.598	N.D.	1.785	N.D.	N.D.		N.D.	N.D.		N.D.			9.900	N.D.	N.D.			10.663
		N.D.		N.D.		N.D.	N.D.		N.D.	N.D.	5.610	N.D.	0.747	1.841		N.D.	N.D.	3.474	0.738	
7	B12 7 MM	N.D.	N.D.	N.D.	0.853	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.190	N.D.	N.D.	N.D.	N.D.	1.286
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	0.559	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.359
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	0.532	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.337
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	N.D.	N.D.	0.997	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.749	N.D.	N.D.	N.D.	N.D.	0.780
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
10	B12 10 MM	2.310	N.D.	3.170	5.570	N.D.	N.D.		N.D.	N.D.		N.D.		N.D.	N.D.	3.700	N.D.		N.D.	5.070
			N.D.			N.D.	N.D.		N.D.	N.D.	1.400	N.D.	0.792	N.D.	N.D.		N.D.	1.490	N.D.	

B																				
BS %rec					79.5										80.5					
MS %rec					51.4										60.0					
MSD %rec					51.9										63.3					

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Total Mass of PCBs from bulk sediment sample

Station	Sample ID	51	52	53	54	56	59	60	63	64	66/93	67/100	69	70	71	73	74	75	77	81
1	B12 1 MM	N.D.	7.250	N.D.	N.D.				N.D.	N.D.	3.604	N.D.	0.593	4.632	N.D.	N.D.		N.D.	N.D.	1.393
		N.D.		N.D.	N.D.	4.079	0.681	0.706	N.D.	N.D.		N.D.			N.D.	N.D.	5.002	N.D.	N.D.	
2	B12 2 MM	N.D.	12.939	N.D.	N.D.			N.D.	N.D.		5.685	0.369	0.346	7.423	N.D.	N.D.	N.D.		N.D.	0.909
		N.D.		N.D.	N.D.	1.417	0.906	N.D.	N.D.	1.732					N.D.	N.D.	N.D.	1.054	N.D.	
3	B12 3 MM	N.D.	8.291	N.D.	N.D.			N.D.	N.D.		3.270	N.D.	N.D.	4.816	N.D.	N.D.	N.D.		N.D.	1.025
		N.D.		N.D.	N.D.	0.786	0.546	N.D.	N.D.	1.041		N.D.	N.D.		N.D.	N.D.	N.D.	0.657	N.D.	
4	B12 4 MM	N.D.	1.234	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.034	N.D.	N.D.	0.973	N.D.	N.D.	N.D.	N.D.	N.D.	1.000
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
5	B12 5 MM	N.D.	9.528		N.D.		N.D.		N.D.	N.D.	6.635	0.502	N.D.	10.394	N.D.	N.D.	N.D.		N.D.	30.216
		N.D.		0.665	N.D.	1.021	N.D.	0.369	N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	0.540	N.D.	
6	B12 6 MM	N.D.	24.842		N.D.				0.532		10.055	0.501	N.D.	20.771	N.D.	N.D.	N.D.		N.D.	60.869
		N.D.			N.D.	3.088	0.606	0.921		3.270			N.D.		N.D.	N.D.	N.D.	1.838	N.D.	
7	B12 7 MM	N.D.	3.490	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.035	N.D.	N.D.	1.461	N.D.	N.D.	N.D.	N.D.	N.D.	1.865
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	1.100	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.324	N.D.	N.D.	0.473	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	N.D.	1.245	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.542	N.D.	N.D.	N.D.	N.D.	N.D.	1.078
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	1.702	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.155	N.D.	N.D.	0.876	N.D.	N.D.	N.D.	N.D.	N.D.	1.336
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
10	B12 10 MM	N.D.	14.500		N.D.	N.D.		N.D.	N.D.		4.130	1.720	1.100	5.030	N.D.	N.D.		N.D.	N.D.	N.D.
		N.D.		1.930	N.D.	N.D.	3.290	N.D.	N.D.	0.814					N.D.	N.D.	7.010	N.D.	N.D.	N.D.

B		51	52	53	54	56	59	60	63	64	66/93	67/100	69	70	71	73	74	75	77	81
BS %rec			76								86									
MS %rec			71.4								81.4									
MSD %rec			67.2								84.2									

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Total Mass of PCBs from bulk sediment sample

Station	Sample ID	82	83	84	85	87/115	91	92	95	97	99	101/90	103	104	105	107	110	114	117	118
1	B12 1 MM	1.540	N.D.	3.616	N.D.	3.702	2.214	4.767	10.699	4.138	4.442	10.863	N.D.	1.521		1.614	14.821	N.D.	N.D.	9.567
			N.D.		N.D.								N.D.		3.462			N.D.	N.D.	
2	B12 2 MM	1.932	1.165	6.122	N.D.	6.730	3.010	3.931	16.501	6.641	10.229	19.073	N.D.	1.227		3.003	22.185	N.D.	N.D.	16.833
					N.D.								N.D.		6.576			N.D.	N.D.	
3	B12 3 MM	2.081	0.870	4.056	3.490	7.630	2.600	3.590	11.742	7.133	12.676	19.220	N.D.	1.693		4.864	21.868	N.D.	N.D.	32.561
													N.D.		13.118			N.D.	N.D.	
4	B12 4 MM	N.D.	N.D.	N.D.	N.D.	0.613	N.D.	0.478	1.470	0.688	1.040	1.859	N.D.	1.344		N.D.	2.207	N.D.	N.D.	3.030
		N.D.	N.D.	N.D.	N.D.		N.D.						N.D.		0.394	N.D.		N.D.	N.D.	
5	B12 5 MM	4.846	2.427	8.502	7.280	19.320	6.334	6.897	25.488	14.816	28.109	41.749	0.367	1.546		10.122	57.778	N.D.	N.D.	55.169
															23.630			N.D.	N.D.	
6	B12 6 MM	9.701	5.894	19.818	12.038	41.715	10.666	16.942	53.661	27.517	36.283	77.015	0.442	N.D.		16.346	103.584	N.D.	N.D.	81.580
														N.D.	40.446			N.D.	N.D.	
7	B12 7 MM	0.514	N.D.	1.135	N.D.	1.226	0.685	0.691	3.534	1.486	1.415	3.365	N.D.	0.804		N.D.	4.862	N.D.	N.D.	3.445
			N.D.		N.D.								N.D.		0.538	N.D.		N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	N.D.	0.379	0.285	N.D.	1.128	0.365	0.557	1.085	N.D.	N.D.	N.D.	N.D.	1.363	N.D.	N.D.	2.209
		N.D.	N.D.	N.D.	N.D.			N.D.					N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	N.D.	0.662	0.359	0.868	2.422	0.633	0.674	1.827	N.D.	N.D.		N.D.	1.979	N.D.	N.D.	2.273
		N.D.	N.D.	N.D.	N.D.								N.D.	N.D.	0.339	N.D.		N.D.	N.D.	
9	B12 9 MM	0.382	N.D.	0.717	N.D.	0.937	0.434	0.967	2.839	1.081	1.310	2.782	N.D.	1.439		N.D.	3.474	N.D.	N.D.	2.849
			N.D.		N.D.								N.D.		0.603	N.D.		N.D.	N.D.	
10	B12 10 MM	N.D.	N.D.	N.D.	N.D.	4.480	2.150	3.520	14.500	3.740	7.050	14.300	N.D.	N.D.		1.140	10.300	N.D.	N.D.	13.600
		N.D.	N.D.	N.D.	N.D.								N.D.	N.D.	4.560			N.D.	N.D.	

B			
BS %rec	71	74.5	97.5
MS %rec	77.2	48.9	86.1
MSD %rec	87.8	55.6	86.9

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Total Mass of PCBs from bulk sediment sample

Station	Sample ID	119	122	123	124	128	129	130	131	132	134	135	136	137	138/163	141	144	146	147	149
1	B12 1 MM	N.D.	N.D.	N.D.	N.D.	1.707	0.594	N.D.	N.D.		N.D.		N.D.	N.D.		3.281	N.D.	1.162	N.D.	7.299
		N.D.	N.D.	N.D.	N.D.			N.D.	N.D.		N.D.	1.166	N.D.	N.D.	12.554		N.D.		N.D.	
2	B12 2 MM	0.632	N.D.	N.D.	N.D.	3.403	0.791	1.074	N.D.		1.131		2.707	0.721				2.221	N.D.	11.173
			N.D.	N.D.	N.D.				N.D.			2.790			21.376	3.406	2.286		N.D.	
3	B12 3 MM	0.653	N.D.	N.D.	N.D.	9.389	2.869	3.118	2.366		3.243		2.838	3.663				4.795	1.259	19.579
			N.D.	N.D.	N.D.							4.468			52.433	7.679	3.272			
4	B12 4 MM	N.D.	N.D.	N.D.	N.D.	0.377	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.				0.709	N.D.	3.036
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	0.357	N.D.	N.D.	4.164	0.899	0.550		N.D.	
5	B12 5 MM	1.129	N.D.		2.952	13.525	3.519	4.378	2.062		3.246		3.934	4.898				6.272	1.391	27.039
			N.D.	1.103								6.640			63.894	10.605	2.691			
6	B12 6 MM	2.109	N.D.		4.987	22.326	7.048	7.833	5.223		8.754		8.242	7.758				11.659	2.908	46.667
			N.D.	1.751								13.239			118.326	21.341	5.109			
7	B12 7 MM	N.D.	N.D.	N.D.	N.D.	0.382	N.D.	N.D.	N.D.		N.D.	N.D.	0.938	N.D.			N.D.	0.299	N.D.	1.973
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	2.669	0.293	N.D.		N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.722
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	1.287	N.D.	N.D.	N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	N.D.	0.349	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	1.438
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	2.232	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	N.D.	N.D.	N.D.	0.657	N.D.	N.D.	N.D.		N.D.	N.D.	1.312	N.D.				0.514	N.D.	3.262
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	4.589	0.620	0.860		N.D.	
10	B12 10 MM	0.453	N.D.	N.D.	N.D.	2.430	6.250	0.524	N.D.		N.D.	N.D.	N.D.	3.050	8.680	N.D.	N.D.	N.D.	N.D.	11.400
			N.D.	N.D.	N.D.				N.D.		N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	

	138/163	141
B		
BS %rec	77.5	86
MS %rec	38.9	54.2
MSD %rec	42.8	63.6

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Total Mass of PCBs from bulk sediment sample

Station	Sample ID	151	153	154	156	157	158	164	165	167	170	171	172	173	174	175	176	177	178	179
1	B12 1 MM	2.294		N.D.	1.144	1.506	0.676		N.D.	N.D.	2.678		N.D.	N.D.	2.976	N.D.	0.748	1.950	1.170	
			10.341	N.D.				0.588	N.D.	N.D.		1.220	N.D.	N.D.		N.D.				2.800
2	B12 2 MM	3.464		N.D.	1.641	1.067	1.922		N.D.	0.737	3.468		N.D.	N.D.	3.616	N.D.	0.900	1.908	1.111	
			17.487	N.D.				1.136	N.D.			0.898	N.D.	N.D.		N.D.				2.843
3	B12 3 MM	4.008		N.D.	7.518	1.939	6.191		N.D.	2.816	8.975		0.882	N.D.	4.184	N.D.	N.D.	2.670	0.883	
			35.372	N.D.				3.079	N.D.			2.136		N.D.		N.D.	N.D.			2.239
4	B12 4 MM	0.655		N.D.	N.D.	0.396	0.307		N.D.	N.D.	1.746		0.438	N.D.	2.237	N.D.	N.D.	1.294	1.910	
			4.012	N.D.	N.D.			0.351	N.D.	N.D.		0.493		N.D.		N.D.	N.D.			1.384
5	B12 5 MM	5.380		N.D.	10.586	2.169	8.246		N.D.	3.134	6.486		0.779	N.D.	3.990	N.D.	N.D.	2.435	0.515	
			41.850	N.D.				4.451	N.D.			1.998		N.D.		N.D.	N.D.			1.541
6	B12 6 MM	11.962		0.992	15.583	3.786	12.150		N.D.	5.158	16.262		1.950	N.D.	9.340	0.454	N.D.	5.288	1.738	
			70.825					8.182	N.D.			4.518		N.D.			N.D.			4.557
7	B12 7 MM	0.419		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.306	N.D.	
			2.044	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.597
7DUP	B12 7 MM DUP	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	0.982	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.471	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	1.525	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.889
9	B12 9 MM	0.738		N.D.	0.327	0.401	0.279	N.D.	N.D.	N.D.	1.201	N.D.	N.D.	N.D.	1.160	0.217	N.D.	0.732	0.437	
			3.867	N.D.				N.D.	N.D.	N.D.		N.D.	N.D.	N.D.			N.D.			1.221
10	B12 10 MM	2.650		N.D.	1.830	1.580	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	6.270	N.D.	N.D.
			9.130	N.D.			N.D.	1.890	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.

		151	153	170
B				
BS %rec		68	73.5	69
MS %rec		63.6	54.2	52.5
MSD %rec		71.7	45.6	39.7

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Total Mass of PCBs from bulk sediment sample

Station	Sample ID	180	183	185	187	189	190	191	193	194	195	196	197	199	200	201	202	203	205	206
1	B12 1 MM	8.602	2.536	0.998	6.746	N.D.		N.D.	0.487	5.572		3.665	N.D.	7.174		0.980		3.665	N.D.	6.686
						N.D.	0.613	N.D.			2.117		N.D.		1.180		2.545		N.D.	
2	B12 2 MM	7.363	2.109	0.774	4.971	N.D.		N.D.	0.460	2.842		1.987	N.D.	4.172		0.799		1.987	N.D.	3.580
						N.D.	0.741	N.D.			0.887		N.D.		0.628		1.704		N.D.	
3	B12 3 MM	9.186	2.821	0.554	4.314	N.D.		N.D.	0.556	2.254		1.383	N.D.	2.339	N.D.	N.D.	N.D.	1.383	N.D.	3.499
						N.D.	1.448	N.D.			0.711		N.D.		N.D.	N.D.	N.D.		N.D.	
4	B12 4 MM	4.280	1.146	N.D.	3.129	N.D.	N.D.	N.D.	0.318	1.139		0.537	N.D.	1.490	N.D.	N.D.		0.537	N.D.	0.560
				N.D.		N.D.	N.D.	N.D.			0.285		N.D.		N.D.	N.D.	0.529		N.D.	
5	B12 5 MM	7.784	2.413	0.220	3.104	N.D.		0.234	0.549	0.656		0.357	N.D.	0.548	N.D.	N.D.	N.D.	0.357	N.D.	0.424
						N.D.	1.212				0.321		N.D.		N.D.	N.D.	N.D.		N.D.	
6	B12 6 MM	18.740	5.796	0.908	9.397	N.D.		0.407	1.100	3.360		3.281	N.D.	4.593		0.628		3.281	N.D.	2.348
						N.D.	2.642				1.243		N.D.		0.807		1.388		N.D.	
7	B12 7 MM	1.181	N.D.	N.D.	0.529	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B12 7 MM DUP	0.840	N.D.	N.D.	0.215	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	1.101	0.325	N.D.	0.540	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B12 9 MM	2.657	0.735	0.279	1.907	N.D.	N.D.	N.D.	0.188	0.764		0.509	N.D.	1.093	N.D.	N.D.		0.509	N.D.	0.790
						N.D.	N.D.	N.D.			0.295		N.D.		N.D.	N.D.	0.460		N.D.	
10	B12 10 MM	4.010	1.080	1.520	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	2.430	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					N.D.	N.D.	0.584	N.D.	N.D.	N.D.	0.637	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

		180	183	185	187	206
B						
BS %rec		67	66.5		68.5	59.5
MS %rec		40.0	42.8		46.9	38.3
MSD %rec		43.6	48.9		52.8	41.1

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Total Mass of PCBs from bulk sediment sample

Station	Sample ID	207	208
1	B12 1 MM	0.847	
			2.561
2	B12 2 MM	0.319	
			1.168
3	B12 3 MM	0.331	
			0.943
4	B12 4 MM	N.D.	N.D.
		N.D.	N.D.
5	B12 5 MM	N.D.	N.D.
		N.D.	N.D.
6	B12 6 MM	0.307	
			0.826
7	B12 7 MM	N.D.	N.D.
		N.D.	N.D.
7DUP	B12 7 MM DUP	N.D.	N.D.
		N.D.	N.D.
8	B12 8 MM	N.D.	N.D.
		N.D.	N.D.
9	B12 9 MM	N.D.	
		N.D.	0.258
10	B12 10 MM	N.D.	
		N.D.	1.180

B			
BS %rec			
MS %rec			
MSD %rec			

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Units for %S - ng PCB/g whole sediment sample, dry weight basis
cannot be resolved due to multiple co-elutions

Station	Sample ID	RL	DL	1	3	5	6	7	8	9	12/13	14	15/16	17	18	19	20	22
1	B12 1 MM	0.09	0.030	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		0.09		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.232	N.D.	N.D.	N.D.	N.D.	N.D.
2	B12 2 MM	0.09	0.030	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.542	N.D.			0.139	N.D.		0.077
		0.09		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.237	0.145		N.D.		
3	B12 3 MM	0.07	0.023	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		0.07		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
4	B12 4 MM	0.05	0.017	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.05		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
5	B12 5 MM	0.04	0.013	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		0.04		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
6	B12 6 MM	0.04	0.013	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.029	N.D.	N.D.	N.D.
		0.04		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.025		N.D.	N.D.	N.D.
7	B12 7 MM	0.05	0.017	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.05		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B12 7 MM DUP	0.04	0.013	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.04		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	0.04	0.013	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.04		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B12 9 MM	0.05	0.017	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		0.05		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
10	B12 10 MM	0.05	0.017	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			0.665	N.D.		N.D.
		0.05		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.680	0.176		N.D.		N.D.

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	24/27	25	26	28/31	29	32	33	34	35	37	40	41	42	44	45	46	47	48	49
1	B12 1 MM	N.D.	N.D.	N.D.	0.278	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	0.184	N.D.	N.D.	N.D.	N.D.	0.237
		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	0.165	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
2	B12 2 MM	0.077	0.082	0.065	0.342	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.			0.453	N.D.	N.D.			0.558
						N.D.	N.D.	N.D.	N.D.	N.D.	0.267	N.D.	0.055	0.128		N.D.	N.D.	0.214	0.109	
3	B12 3 MM	N.D.	N.D.	N.D.	0.151	N.D.	N.D.		N.D.	N.D.		N.D.			0.212	N.D.	N.D.		N.D.	0.244
		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	0.125	N.D.	0.055	0.054		N.D.	N.D.	0.071	N.D.	
4	B12 4 MM	N.D.	N.D.	N.D.	0.038	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.027
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
5	B12 5 MM	N.D.	N.D.	0.016	0.029	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		0.105	N.D.	N.D.			0.220
		N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	0.071	N.D.	N.D.	0.025		N.D.	N.D.	0.091	0.014	
6	B12 6 MM	N.D.	0.024	N.D.	0.071	N.D.	N.D.		N.D.	N.D.		N.D.			0.396	N.D.	N.D.			0.427
		N.D.		N.D.		N.D.	N.D.		N.D.	N.D.	0.224	N.D.	0.030	0.074		N.D.	N.D.	0.139	0.030	
7	B12 7 MM	N.D.	N.D.	N.D.	0.043	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.060	N.D.	N.D.	N.D.	N.D.	0.064
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	0.022	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.014
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	0.021	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.013
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	N.D.	N.D.	0.050	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.037	N.D.	N.D.	N.D.	N.D.	0.039
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
10	B12 10 MM	0.116	N.D.	0.159	0.279	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	0.185	N.D.		N.D.	0.254
			N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	0.070	N.D.	0.040	N.D.	N.D.		N.D.	0.075	N.D.	

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	51	52	53	54	56	59	60	63	64	66/93	67/100	69	70	71	73	74	75	77	81
1	B12 1 MM	N.D.	0.653	N.D.	N.D.				N.D.	N.D.	0.324	N.D.	0.053	0.417	N.D.	N.D.		N.D.	N.D.	0.125
		N.D.		N.D.	N.D.	0.367	0.061	0.064	N.D.	N.D.		N.D.			N.D.	N.D.	0.450	N.D.	N.D.	
2	B12 2 MM	N.D.	1.165	N.D.	N.D.			N.D.	N.D.		0.512	0.033	0.031	0.668	N.D.	N.D.	N.D.		N.D.	0.082
		N.D.		N.D.	N.D.	0.128	0.082	N.D.	N.D.	0.156					N.D.	N.D.	N.D.	0.095	N.D.	
3	B12 3 MM	N.D.	0.580	N.D.	N.D.			N.D.	N.D.		0.229	N.D.	N.D.	0.337	N.D.	N.D.	N.D.		N.D.	0.072
		N.D.		N.D.	N.D.	0.055	0.038	N.D.	N.D.	0.073		N.D.	N.D.		N.D.	N.D.	N.D.	0.046	N.D.	
4	B12 4 MM	N.D.	0.062	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.052	N.D.	N.D.	0.049	N.D.	N.D.	N.D.	N.D.	N.D.	0.050
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
5	B12 5 MM	N.D.	0.381		N.D.		N.D.		N.D.	N.D.	0.265	0.020	N.D.	0.416	N.D.	N.D.	N.D.		N.D.	1.209
		N.D.		0.027	N.D.	0.041	N.D.	0.015	N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	0.022	N.D.	
6	B12 6 MM	N.D.	0.994		N.D.				0.021		0.402	0.020	N.D.	0.831	N.D.	N.D.	N.D.		N.D.	2.435
		N.D.			N.D.	0.124	0.024	0.037		0.131			N.D.		N.D.	N.D.	N.D.	0.074	N.D.	
7	B12 7 MM	N.D.	0.175	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.052	N.D.	N.D.	0.073	N.D.	N.D.	N.D.	N.D.	N.D.	0.093
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	0.044	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.013	N.D.	N.D.	0.019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	N.D.	0.050	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.022	N.D.	N.D.	N.D.	N.D.	N.D.	0.043
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	0.085	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.058	N.D.	N.D.	0.044	N.D.	N.D.	N.D.	N.D.	N.D.	0.067
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
10	B12 10 MM	N.D.	0.725		N.D.	N.D.		N.D.	N.D.		0.207	0.086	0.055	0.252	N.D.	N.D.		N.D.	N.D.	N.D.
		N.D.		0.097	N.D.	N.D.	0.165	N.D.	N.D.	0.041					N.D.	N.D.	0.351	N.D.	N.D.	N.D.

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	82	83	84	85	87/115	91	92	95	97	99	101/90	103	104	105	107	110	114	117	118
1	B12 1 MM	0.139	N.D.	0.325	N.D.	0.333	0.199	0.429	0.963	0.372	0.400	0.978	N.D.	0.137		0.145	1.334	N.D.	N.D.	0.861
			N.D.		N.D.								N.D.		0.312			N.D.	N.D.	
2	B12 2 MM	0.174	0.105	0.551	N.D.	0.606	0.271	0.354	1.485	0.598	0.921	1.717	N.D.	0.110		0.270	1.997	N.D.	N.D.	1.515
					N.D.								N.D.		0.592			N.D.	N.D.	
3	B12 3 MM	0.146	0.061	0.284	0.244	0.534	0.182	0.251	0.822	0.499	0.887	1.345	N.D.	0.119		0.340	1.531	N.D.	N.D.	2.279
													N.D.		0.918			N.D.	N.D.	
4	B12 4 MM	N.D.	N.D.	N.D.	N.D.	0.031	N.D.	0.024	0.074	0.034	0.052	0.093	N.D.	0.067		N.D.	0.110	N.D.	N.D.	0.152
		N.D.	N.D.	N.D.	N.D.		N.D.						N.D.		0.020	N.D.		N.D.	N.D.	
5	B12 5 MM	0.194	0.097	0.340	0.291	0.773	0.253	0.276	1.020	0.593	1.124	1.670	0.015	0.062		0.405	2.311	N.D.	N.D.	2.207
															0.945			N.D.	N.D.	
6	B12 6 MM	0.388	0.236	0.793	0.482	1.669	0.427	0.678	2.146	1.101	1.451	3.081	0.018	N.D.		0.654	4.143	N.D.	N.D.	3.263
														N.D.	1.618			N.D.	N.D.	
7	B12 7 MM	0.026	N.D.	0.057	N.D.	0.061	0.034	0.035	0.177	0.074	0.071	0.168	N.D.	0.040		N.D.	0.243	N.D.	N.D.	0.172
			N.D.		N.D.								N.D.		0.027	N.D.		N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	N.D.	0.015	0.011	N.D.	0.045	0.015	0.022	0.043	N.D.	N.D.	N.D.	N.D.	0.055	N.D.	N.D.	0.088
		N.D.	N.D.	N.D.	N.D.			N.D.					N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	N.D.	0.026	0.014	0.035	0.097	0.025	0.027	0.073	N.D.	N.D.		N.D.	0.079	N.D.	N.D.	0.091
		N.D.	N.D.	N.D.	N.D.								N.D.	N.D.	0.014	N.D.		N.D.	N.D.	
9	B12 9 MM	0.019	N.D.	0.036	N.D.	0.047	0.022	0.048	0.142	0.054	0.066	0.139	N.D.	0.072		N.D.	0.174	N.D.	N.D.	0.142
													N.D.		0.030	N.D.		N.D.	N.D.	
10	B12 10 MM	N.D.	N.D.	N.D.	N.D.	0.224	0.108	0.176	0.725	0.187	0.353	0.715	N.D.	N.D.		0.057	0.515	N.D.	N.D.	0.680
		N.D.	N.D.	N.D.	N.D.								N.D.	N.D.	0.228			N.D.	N.D.	

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	119	122	123	124	128	129	130	131	132	134	135	136	137	138/163	141	144	146	147	149
1	B12 1 MM	N.D.	N.D.	N.D.	N.D.	0.154	0.053	N.D.	N.D.		N.D.		N.D.	N.D.		0.295	N.D.	0.105	N.D.	0.657
		N.D.	N.D.	N.D.	N.D.			N.D.	N.D.		N.D.	0.105	N.D.	N.D.	1.130		N.D.		N.D.	
2	B12 2 MM	0.057	N.D.	N.D.	N.D.	0.306	0.071	0.097	N.D.		0.102		0.244	0.065				0.200	N.D.	1.006
			N.D.	N.D.	N.D.				N.D.			0.251			1.924	0.307	0.206		N.D.	
3	B12 3 MM	0.046	N.D.	N.D.	N.D.	0.657	0.201	0.218	0.166		0.227		0.199	0.256				0.336	0.088	1.371
			N.D.	N.D.	N.D.							0.313			3.670	0.538	0.229			
4	B12 4 MM	N.D.	N.D.	N.D.	N.D.	0.019	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.				0.035	N.D.	0.152
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	0.018	N.D.	N.D.	0.208	0.045	0.028		N.D.	
5	B12 5 MM	0.045	N.D.		0.118	0.541	0.141	0.175	0.082		0.130		0.157	0.196				0.251	0.056	1.082
			N.D.	0.044								0.266			2.556	0.424	0.108			
6	B12 6 MM	0.084	N.D.		0.199	0.893	0.282	0.313	0.209		0.350		0.330	0.310				0.466	0.116	1.867
			N.D.	0.070								0.530			4.733	0.854	0.204			
7	B12 7 MM	N.D.	N.D.	N.D.	N.D.	0.019	N.D.	N.D.	N.D.		N.D.	N.D.	0.047	N.D.			N.D.	0.015	N.D.	0.099
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	0.133	0.015	N.D.		N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.029
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.051	N.D.	N.D.	N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	N.D.	0.014	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.058
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.089	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	N.D.	N.D.	N.D.	0.033	N.D.	N.D.	N.D.		N.D.	N.D.	0.066	N.D.				0.026	N.D.	0.163
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	0.229	0.031	0.043		N.D.	
10	B12 10 MM	0.023	N.D.	N.D.	N.D.	0.122	0.313	0.026	N.D.		N.D.	N.D.	N.D.	0.153	0.434	N.D.	N.D.	N.D.	N.D.	0.570
			N.D.	N.D.	N.D.				N.D.		N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	151	153	154	156	157	158	164	165	167	170	171	172	173	174	175	176	177	178	179
1	B12 1 MM	0.206		N.D.	0.103	0.136	0.061		N.D.	N.D.	0.241		N.D.	N.D.	0.268	N.D.	0.067	0.176	0.105	
			0.931	N.D.				0.053	N.D.	N.D.		0.110	N.D.	N.D.		N.D.				0.252
2	B12 2 MM	0.312		N.D.	0.148	0.096	0.173		N.D.	0.066	0.312		N.D.	N.D.	0.325	N.D.	0.081	0.172	0.100	
			1.574	N.D.				0.102	N.D.			0.081	N.D.	N.D.		N.D.				0.256
3	B12 3 MM	0.281		N.D.	0.526	0.136	0.433		N.D.	0.197	0.628		0.062	N.D.	0.293	N.D.	N.D.	0.187	0.062	
			2.476	N.D.				0.216	N.D.			0.150		N.D.		N.D.	N.D.			0.157
4	B12 4 MM	0.033		N.D.	N.D.	0.020	0.015		N.D.	N.D.	0.087		0.022	N.D.	0.112	N.D.	N.D.	0.065	0.096	
			0.201	N.D.	N.D.			0.018	N.D.	N.D.		0.025		N.D.		N.D.	N.D.			0.069
5	B12 5 MM	0.215		N.D.	0.423	0.087	0.330		N.D.	0.125	0.259		0.031	N.D.	0.160	N.D.	N.D.	0.097	0.021	
			1.674	N.D.				0.178	N.D.			0.080		N.D.		N.D.	N.D.			0.062
6	B12 6 MM	0.478		0.040	0.623	0.151	0.486		N.D.	0.206	0.650		0.078	N.D.	0.374	0.018	N.D.	0.212	0.070	
			2.833					0.327	N.D.			0.181		N.D.			N.D.			0.182
7	B12 7 MM	0.021		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.015	N.D.	
			0.102	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.030
7DUP	B12 7 MM DUP	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	0.039	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	0.061	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.036
9	B12 9 MM	0.037		N.D.	0.016	0.020	0.014	N.D.	N.D.	N.D.	0.060	N.D.	N.D.	N.D.	0.058	0.011	N.D.	0.037	0.022	
			0.193	N.D.				N.D.	N.D.	N.D.		N.D.	N.D.	N.D.			N.D.			0.061
10	B12 10 MM	0.133		N.D.	0.092	0.079	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.314	N.D.	N.D.
			0.457	N.D.			N.D.	0.095	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	180	183	185	187	189	190	191	193	194	195	196	197	199	200	201	202	203	205	206
1	B12 1 MM	0.774	0.228	0.090	0.607	N.D.		N.D.	0.044	0.501		0.330	N.D.	0.646		0.088		0.330	N.D.	0.602
						N.D.	0.055	N.D.			0.191		N.D.		0.106		0.229		N.D.	
2	B12 2 MM	0.663	0.190	0.070	0.447	N.D.		N.D.	0.041	0.256		0.179	N.D.	0.375		0.072		0.179	N.D.	0.322
						N.D.	0.067	N.D.			0.080		N.D.		0.057		0.153		N.D.	
3	B12 3 MM	0.643	0.197	0.039	0.302	N.D.		N.D.	0.039	0.158		0.097	N.D.	0.164	N.D.	N.D.	N.D.	0.097	N.D.	0.245
						N.D.	0.101	N.D.			0.050		N.D.		N.D.	N.D.	N.D.		N.D.	
4	B12 4 MM	0.214	0.057	N.D.	0.156	N.D.	N.D.	N.D.	0.016	0.057		0.027	N.D.	0.075	N.D.	N.D.		0.027	N.D.	0.028
				N.D.		N.D.	N.D.	N.D.			0.014		N.D.		N.D.	N.D.	0.026		N.D.	
5	B12 5 MM	0.311	0.097	0.009	0.124	N.D.		0.009	0.022	0.026		0.014	N.D.	0.022	N.D.	N.D.	N.D.	0.014	N.D.	0.017
						N.D.	0.048				0.013		N.D.		N.D.	N.D.	N.D.		N.D.	
6	B12 6 MM	0.750	0.232	0.036	0.376	N.D.		0.016	0.044	0.134		0.131	N.D.	0.184		0.025		0.131	N.D.	0.094
						N.D.	0.106				0.050		N.D.		0.032		0.056		N.D.	
7	B12 7 MM	0.059	N.D.	N.D.	0.026	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B12 7 MM DUP	0.034	N.D.	N.D.	0.009	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	0.044	0.013	N.D.	0.022	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B12 9 MM	0.133	0.037	0.014	0.095	N.D.	N.D.	N.D.	0.009	0.038		0.025	N.D.	0.055	N.D.	N.D.		0.025	N.D.	0.040
						N.D.	N.D.	N.D.			0.015		N.D.		N.D.	N.D.	0.023		N.D.	
10	B12 10 MM	0.201	0.054	0.076	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	0.122	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					N.D.	N.D.	0.029	N.D.	N.D.	N.D.	0.032	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	207	208
1	B12 1 MM	0.076	
			0.230
2	B12 2 MM	0.029	
			0.105
3	B12 3 MM	0.023	
			0.066
4	B12 4 MM	N.D.	N.D.
		N.D.	N.D.
5	B12 5 MM	N.D.	N.D.
		N.D.	N.D.
6	B12 6 MM	0.012	
			0.033
7	B12 7 MM	N.D.	N.D.
		N.D.	N.D.
7DUP	B12 7 MM DUP	N.D.	N.D.
		N.D.	N.D.
8	B12 8 MM	N.D.	N.D.
		N.D.	N.D.
9	B12 9 MM	N.D.	
		N.D.	0.013
10	B12 10 MM	N.D.	
		N.D.	0.059

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

Units for %S/%D - ng PCB/g < 2-mm sediment, dry weight basis

(shaded) cannot be resolved due to multiple co-elutions

Station	Sample ID	RL	% Debris Factor	DL	1	3	5	6	7	8	9	12/13	14	15/16	17	18	19	20	22
1	B12 1 MM	0.14	0.36	0.047	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		0.14			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.361	N.D.	N.D.	N.D.	N.D.	N.D.
2	B12 2 MM	0.11	0.18	0.037	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.663	N.D.			0.169	N.D.		0.094
		0.11			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.289	0.177		N.D.		
3	B12 3 MM	0.11	0.36	0.037	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		0.11			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
4	B12 4 MM	0.12	0.58	0.040	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.12			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
5	B12 5 MM	0.11	0.64	0.037	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		0.11			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
6	B12 6 MM	0.12	0.67	0.040	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.088	N.D.	N.D.	N.D.
		0.12			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.075		N.D.	N.D.	N.D.
7	B12 7 MM	0.11	0.55	0.037	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.11			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B12 7 MM DUP	0.15	0.73	0.050	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.15			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	0.13	0.69	0.043	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.13			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B12 9 MM	0.1	0.50	0.033	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		0.1			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
10	B12 10 MM	0.07	0.29	0.023	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			0.931	N.D.		N.D.
		0.07			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.952	0.246		N.D.		N.D.

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids
and % debris

Station	Sample ID	24/27	25	26	28/31	29	32	33	34	35	37	40	41	42	44	45	46	47	48	49
1	B12 1 MM	N.D.	N.D.	N.D.	0.433	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	0.286	N.D.	N.D.	N.D.	N.D.	0.369
		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	0.256	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
2	B12 2 MM	0.095	0.100	0.079	0.418	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.			0.554	N.D.	N.D.			0.682
						N.D.	N.D.	N.D.	N.D.	N.D.	0.327	N.D.	0.067	0.157		N.D.	N.D.	0.261	0.133	
3	B12 3 MM	N.D.	N.D.	N.D.	0.237	N.D.	N.D.		N.D.	N.D.		N.D.			0.333	N.D.	N.D.		N.D.	0.383
		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	0.196	N.D.	0.086	0.085		N.D.	N.D.	0.112	N.D.	
4	B12 4 MM	N.D.	N.D.	N.D.	0.090	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.064
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
5	B12 5 MM	N.D.	N.D.	0.045	0.079	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		0.289	N.D.	N.D.			0.605
		N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	0.197	N.D.	N.D.	0.069		N.D.	N.D.	0.251	0.039	
6	B12 6 MM	N.D.	0.072	N.D.	0.214	N.D.	N.D.		N.D.	N.D.		N.D.			1.188	N.D.	N.D.			1.280
		N.D.		N.D.		N.D.	N.D.		N.D.	N.D.	0.673	N.D.	0.090	0.221		N.D.	N.D.	0.417	0.089	
7	B12 7 MM	N.D.	N.D.	N.D.	0.094	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.131	N.D.	N.D.	N.D.	N.D.	0.141
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	0.084	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.054
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	0.069	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.044
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	N.D.	N.D.	0.100	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.075	N.D.	N.D.	N.D.	N.D.	0.078
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	
10	B12 10 MM	0.162	N.D.	0.222	0.390	N.D.	N.D.		N.D.	N.D.		N.D.		N.D.	N.D.	0.259	N.D.		N.D.	0.355
			N.D.			N.D.	N.D.		N.D.	N.D.	0.098	N.D.	0.055	N.D.	N.D.		N.D.	0.104	N.D.	

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids
and % debris

Station	Sample ID	51	52	53	54	56	59	60	63	64	66/93	67/100	69	70	71	73	74	75	77	81
1	B12 1 MM	N.D.	1.015	N.D.	N.D.				N.D.	N.D.	0.505	N.D.	0.083	0.648	N.D.	N.D.		N.D.	N.D.	0.195
		N.D.		N.D.	N.D.	0.571	0.095	0.099	N.D.	N.D.		N.D.			N.D.	N.D.	0.700	N.D.	N.D.	
2	B12 2 MM	N.D.	1.423	N.D.	N.D.			N.D.	N.D.		0.625	0.041	0.038	0.817	N.D.	N.D.	N.D.		N.D.	0.100
		N.D.		N.D.	N.D.	0.156	0.100	N.D.	N.D.	0.191					N.D.	N.D.	N.D.	0.116	N.D.	
3	B12 3 MM	N.D.	0.912	N.D.	N.D.			N.D.	N.D.		0.360	N.D.	N.D.	0.530	N.D.	N.D.	N.D.		N.D.	0.113
		N.D.		N.D.	N.D.	0.086	0.060	N.D.	N.D.	0.115		N.D.	N.D.		N.D.	N.D.	N.D.	0.072	N.D.	
4	B12 4 MM	N.D.	0.148	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.124	N.D.	N.D.	0.117	N.D.	N.D.	N.D.	N.D.	N.D.	0.120
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
5	B12 5 MM	N.D.	1.048		N.D.		N.D.		N.D.	N.D.	0.730	0.055	N.D.	1.143	N.D.	N.D.	N.D.		N.D.	3.324
		N.D.		0.073	N.D.	0.112	N.D.	0.041	N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	0.059	N.D.	
6	B12 6 MM	N.D.	2.981		N.D.				0.064		1.207	0.060	N.D.	2.493	N.D.	N.D.	N.D.		N.D.	7.304
		N.D.			N.D.	0.371	0.073	0.111		0.392			N.D.		N.D.	N.D.	N.D.	0.221	N.D.	
7	B12 7 MM	N.D.	0.384	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.114	N.D.	N.D.	0.161	N.D.	N.D.	N.D.	N.D.	N.D.	0.205
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	0.165	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.049	N.D.	N.D.	0.071	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	N.D.	0.162	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.070	N.D.	N.D.	N.D.	N.D.	N.D.	0.140
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	0.170	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.116	N.D.	N.D.	0.088	N.D.	N.D.	N.D.	N.D.	N.D.	0.134
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
10	B12 10 MM	N.D.	1.015		N.D.	N.D.		N.D.	N.D.		0.289	0.120	0.077	0.352	N.D.	N.D.		N.D.	N.D.	N.D.
		N.D.		0.135	N.D.	N.D.	0.230	N.D.	N.D.	0.057					N.D.	N.D.	0.491	N.D.	N.D.	N.D.

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids
and % debris

Station	Sample ID	82	83	84	85	87/115	91	92	95	97	99	101/90	103	104	105	107	110	114	117	118
1	B12 1 MM	0.216	N.D.	0.506	N.D.	0.518	0.310	0.667	1.498	0.579	0.622	1.521	N.D.	0.213		0.226	2.075	N.D.	N.D.	1.339
			N.D.		N.D.								N.D.		0.485			N.D.	N.D.	
2	B12 2 MM	0.213	0.128	0.673	N.D.	0.740	0.331	0.432	1.815	0.731	1.125	2.098	N.D.	0.135		0.330	2.440	N.D.	N.D.	1.852
					N.D.								N.D.		0.723			N.D.	N.D.	
3	B12 3 MM	0.229	0.096	0.446	0.384	0.839	0.286	0.395	1.292	0.785	1.394	2.114	N.D.	0.186		0.535	2.405	N.D.	N.D.	3.582
													N.D.		1.443			N.D.	N.D.	
4	B12 4 MM	N.D.	N.D.	N.D.	N.D.	0.074	N.D.	0.057	0.176	0.083	0.125	0.223	N.D.	0.161		N.D.	0.265	N.D.	N.D.	0.364
		N.D.	N.D.	N.D.	N.D.		N.D.						N.D.		0.047	N.D.		N.D.	N.D.	
5	B12 5 MM	0.533	0.267	0.935	0.801	2.125	0.697	0.759	2.804	1.630	3.092	4.592	0.040	0.170		1.113	6.356	N.D.	N.D.	6.069
															2.599			N.D.	N.D.	
6	B12 6 MM	1.164	0.707	2.378	1.445	5.006	1.280	2.033	6.439	3.302	4.354	9.242	0.053	N.D.		1.962	12.430	N.D.	N.D.	9.790
														N.D.	4.854			N.D.	N.D.	
7	B12 7 MM	0.057	N.D.	0.125	N.D.	0.135	0.075	0.076	0.389	0.163	0.156	0.370	N.D.	0.088		N.D.	0.535	N.D.	N.D.	0.379
			N.D.		N.D.								N.D.		0.059	N.D.		N.D.	N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	N.D.	0.057	0.043	N.D.	0.169	0.055	0.084	0.163	N.D.	N.D.	N.D.	N.D.	0.204	N.D.	N.D.	0.331
		N.D.	N.D.	N.D.	N.D.			N.D.					N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	N.D.	0.086	0.047	0.113	0.315	0.082	0.088	0.238	N.D.	N.D.		N.D.	0.257	N.D.	N.D.	0.295
		N.D.	N.D.	N.D.	N.D.								N.D.	N.D.	0.044	N.D.		N.D.	N.D.	
9	B12 9 MM	0.038	N.D.	0.072	N.D.	0.094	0.043	0.097	0.284	0.108	0.131	0.278	N.D.	0.144		N.D.	0.347	N.D.	N.D.	0.285
			N.D.		N.D.								N.D.		0.060	N.D.		N.D.	N.D.	
10	B12 10 MM	N.D.	N.D.	N.D.	N.D.	0.314	0.151	0.246	1.015	0.262	0.494	1.001	N.D.	N.D.		0.080	0.721	N.D.	N.D.	0.952
		N.D.	N.D.	N.D.	N.D.								N.D.	N.D.	0.319			N.D.	N.D.	

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

**Corrected for % solids
and % debris**

Station	Sample ID	119	122	123	124	128	129	130	131	132	134	135	136	137	138/163	141	144	146	147	149
1	B12 1 MM	N.D.	N.D.	N.D.	N.D.	0.239	0.083	N.D.	N.D.		N.D.		N.D.	N.D.		0.459	N.D.	0.163	N.D.	1.022
		N.D.	N.D.	N.D.	N.D.			N.D.	N.D.		N.D.	0.163	N.D.	N.D.	1.758		N.D.		N.D.	
2	B12 2 MM	0.070	N.D.	N.D.	N.D.	0.374	0.087	0.118	N.D.		0.124		0.298	0.079				0.244	N.D.	1.229
			N.D.	N.D.	N.D.				N.D.			0.307			2.351	0.375	0.251		N.D.	
3	B12 3 MM	0.072	N.D.	N.D.	N.D.	1.033	0.316	0.343	0.260		0.357		0.312	0.403				0.527	0.138	2.154
			N.D.	N.D.	N.D.							0.491			5.768	0.845	0.360			
4	B12 4 MM	N.D.	N.D.	N.D.	N.D.	0.045	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.				0.085	N.D.	0.364
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	0.043	N.D.	N.D.	0.500	0.108	0.066		N.D.	
5	B12 5 MM	0.124	N.D.		0.325	1.488	0.387	0.482	0.227		0.357		0.433	0.539				0.690	0.153	2.974
			N.D.	0.121								0.730			7.028	1.167	0.296			
6	B12 6 MM	0.253	N.D.		0.598	2.679	0.846	0.940	0.627		1.050		0.989	0.931				1.399	0.349	5.600
			N.D.	0.210								1.589			14.199	2.561	0.613			
7	B12 7 MM	N.D.	N.D.	N.D.	N.D.	0.042	N.D.	N.D.	N.D.		N.D.	N.D.	0.103	N.D.			N.D.	0.033	N.D.	0.217
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	0.294	0.032	N.D.		N.D.	
7DUP	B12 7 MM DUP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.108
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.193	N.D.	N.D.	N.D.	N.D.	
8	B12 8 MM	N.D.	N.D.	N.D.	N.D.	0.045	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.187
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.290	N.D.	N.D.	N.D.	N.D.	
9	B12 9 MM	N.D.	N.D.	N.D.	N.D.	0.066	N.D.	N.D.	N.D.		N.D.	N.D.	0.131	N.D.				0.051	N.D.	0.326
		N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	0.459	0.062	0.086		N.D.	
10	B12 10 MM	0.032	N.D.	N.D.	N.D.	0.170	0.438	0.037	N.D.		N.D.	N.D.	N.D.	0.214	0.608	N.D.	N.D.	N.D.	N.D.	0.798
			N.D.	N.D.	N.D.				N.D.		N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

Station	Sample ID	151	153	154	156	157	158	164	165	167	170	171	172	173	174	175	176	177	178	179
1	B12 1 MM	0.321		N.D.	0.160	0.211	0.095		N.D.	N.D.	0.375		N.D.	N.D.	0.417	N.D.	0.105	0.273	0.164	
			1.448	N.D.				0.082	N.D.	N.D.		0.171	N.D.	N.D.		N.D.				0.392
2	B12 2 MM	0.381		N.D.	0.181	0.117	0.211		N.D.	0.081	0.381		N.D.	N.D.	0.398	N.D.	0.099	0.210	0.122	
			1.924	N.D.				0.125	N.D.			0.099	N.D.	N.D.		N.D.				0.313
3	B12 3 MM	0.441		N.D.	0.827	0.213	0.681		N.D.	0.310	0.987		0.097	N.D.	0.460	N.D.	N.D.	0.294	0.097	
			3.891	N.D.				0.339	N.D.			0.235		N.D.		N.D.	N.D.			0.246
4	B12 4 MM	0.079		N.D.	N.D.	0.048	0.037		N.D.	N.D.	0.210		0.053	N.D.	0.268	N.D.	N.D.	0.155	0.229	
			0.481	N.D.	N.D.			0.042	N.D.	N.D.		0.059		N.D.		N.D.	N.D.			0.166
5	B12 5 MM	0.592		N.D.	1.164	0.239	0.907		N.D.	0.345	0.713		0.086	N.D.	0.439	N.D.	N.D.	0.268	0.057	
			4.604	N.D.				0.490	N.D.			0.220		N.D.		N.D.	N.D.			0.170
6	B12 6 MM	1.435		0.119	1.870	0.454	1.458		N.D.	0.619	1.951		0.234	N.D.	1.121	0.054	N.D.	0.635	0.209	
			8.499					0.982	N.D.			0.542		N.D.			N.D.			0.547
7	B12 7 MM	0.046		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.034	N.D.	
			0.225	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.000	N.D.	0.066
7DUP	B12 7 MM DUP	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	0.147	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.061	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	0.198	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.116
9	B12 9 MM	0.074		N.D.	0.033	0.040	0.028	N.D.	N.D.	N.D.	0.120	N.D.	N.D.	N.D.	0.116	0.022	N.D.	0.073	0.044	
			0.387	N.D.				N.D.	N.D.	N.D.		N.D.	N.D.	N.D.			N.D.			0.122
10	B12 10 MM	0.186		N.D.	0.128	0.111	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.439	N.D.	N.D.
			0.639	N.D.			N.D.	0.132	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

**Corrected for % solids
and % debris**

Station	Sample ID	180	183	185	187	189	190	191	193	194	195	196	197	199	200	201	202	203	205	206
1	B12 1 MM	1.204	0.355	0.140	0.944	N.D.		N.D.	0.068	0.780		0.513	N.D.	1.004		0.137		0.513	N.D.	0.936
						N.D.	0.086	N.D.			0.296		N.D.		0.165		0.356		N.D.	
2	B12 2 MM	0.810	0.232	0.085	0.547	N.D.		N.D.	0.051	0.313		0.219	N.D.	0.459		0.088		0.219	N.D.	0.394
						N.D.	0.082	N.D.			0.098		N.D.		0.069		0.187		N.D.	
3	B12 3 MM	1.010	0.310	0.061	0.475	N.D.		N.D.	0.061	0.248		0.152	N.D.	0.257	N.D.	N.D.	N.D.	0.152	N.D.	0.385
						N.D.	0.159	N.D.			0.078		N.D.		N.D.	N.D.	N.D.		N.D.	
4	B12 4 MM	0.514	0.138	N.D.	0.375	N.D.	N.D.	N.D.	0.038	0.137		0.064	N.D.	0.179	N.D.	N.D.		0.064	N.D.	0.067
				N.D.		N.D.	N.D.	N.D.			0.034		N.D.		N.D.	N.D.	0.063		N.D.	
5	B12 5 MM	0.856	0.265	0.024	0.341	N.D.		0.026	0.060	0.072		0.039	N.D.	0.060	N.D.	N.D.	N.D.	0.039	N.D.	0.047
						N.D.	0.133				0.035		N.D.		N.D.	N.D.	N.D.		N.D.	
6	B12 6 MM	2.249	0.696	0.109	1.128	N.D.		0.049	0.132	0.403		0.394	N.D.	0.551		0.075		0.394	N.D.	0.282
						N.D.	0.317				0.149		N.D.		0.097		0.167		N.D.	
7	B12 7 MM	0.130	N.D.	N.D.	0.058	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B12 7 MM DUP	0.126	N.D.	N.D.	0.032	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B12 8 MM	0.143	0.042	N.D.	0.070	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B12 9 MM	0.266	0.074	0.028	0.191	N.D.	N.D.	N.D.	0.019	0.076		0.051	N.D.	0.109	N.D.	N.D.		0.051	N.D.	0.079
						N.D.	N.D.	N.D.			0.030		N.D.		N.D.	N.D.	0.046		N.D.	
10	B12 10 MM	0.281	0.076	0.106	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	N.D.	0.170	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
					N.D.	N.D.	0.041	N.D.	N.D.	N.D.	0.045	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1f. Concentrations of PCBs Congeners in Sediment - 10-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

Station	Sample ID	207	208
1	B12 1 MM	0.119	
			0.359
2	B12 2 MM	0.035	
			0.128
3	B12 3 MM	0.036	
			0.104
4	B12 4 MM	N.D.	N.D.
		N.D.	N.D.
5	B12 5 MM	N.D.	N.D.
		N.D.	N.D.
6	B12 6 MM	0.037	
			0.099
7	B12 7 MM	N.D.	N.D.
		N.D.	N.D.
7DUP	B12 7 MM DUP	N.D.	N.D.
		N.D.	N.D.
8	B12 8 MM	N.D.	N.D.
		N.D.	N.D.
9	B12 9 MM	N.D.	
		N.D.	0.026
10	B12 10 MM	N.D.	
		N.D.	0.083

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g
cannot be resolved due to coelutions on both columns
J value < reporting limit but > detection limit

Corrected for %solids

Station	Sample ID	%REC TMX	%Rec 209	Report Limit	Detection Limit	1	3	4	5	6	7	8	9	10	12	13	14	15/16
1	B22 1R MM	46.1		0.135	0.034	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			65.5	0.135	0.034	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B22 2 MM	61.3		0.16	0.040	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			82.0	0.16	0.040	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.154
3	B22 3 MM	69.0		0.148	0.037	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			81.6	0.148	0.037	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.098
4	B22 4 MM	56.6		0.106	0.027	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			67.0	0.106	0.027	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.046
5	B22 5 MM	44.2		0.102	0.026	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			70.3	0.102	0.026	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.028
6	B22 6 MM	58.1		0.134	0.034	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			72.9	0.134	0.034	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7	B22 7MM	61.1		0.165	0.041	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			57.6	0.165	0.041	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP	66.4		0.184	0.046	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			84.3	0.184	0.046	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.245
8	B22 8 MM	52.3		0.105	0.026	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			81.6	0.105	0.026	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM	60.4		0.141	0.035	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			64.4	0.141	0.035	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.078
10	B22 10 MM	39.0		0.123	0.031	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			47.4	0.123	0.031	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Blank		44.5	67.5	0.100	0.025	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec		58.5	74.5						87.5									
MS %Rec		57.5	60.5						88.9									
MSD %Rec		56.5	66.0						91.9									

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	17	18	19	20	22	24	25	26	27	28/31	29	32	33	34	35	37	40	41
1	B22 1R MM		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.202	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.095	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B22 2 MM		0.192	N.D.		N.D.	N.D.	0.264	0.230	N.D.	1.173	0.220			N.D.	N.D.	N.D.		N.D.
		0.501		N.D.		N.D.	N.D.			N.D.			0.081	0.185	N.D.	N.D.	N.D.	0.161	N.D.
3	B22 3 MM		0.085	N.D.		N.D.	N.D.	0.057	0.054	N.D.	0.349	N.D.			N.D.	N.D.	N.D.	0.041	N.D.
		0.404		N.D.		N.D.	N.D.			N.D.		N.D.	0.082	0.046	N.D.	N.D.	N.D.		N.D.
4	B22 4 MM		0.066	N.D.		N.D.	N.D.	0.039	N.D.	N.D.	0.149	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.
		0.108		N.D.		N.D.	N.D.		N.D.	N.D.		N.D.	0.034	0.031	N.D.	N.D.	N.D.	N.D.	N.D.
5	B22 5 MM		0.031	N.D.		N.D.	N.D.	0.034	0.030	N.D.	0.103	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.054		N.D.		N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B22 6 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.110	0.079	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7	B22 7MM		0.054	N.D.	N.D.	N.D.	N.D.	0.044	0.058	N.D.	0.132	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.093		N.D.	N.D.	N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP		0.326	N.D.		0.132	N.D.	0.207	0.264	N.D.	0.686	N.D.			N.D.	N.D.	N.D.	0.149	N.D.
		0.532		N.D.			N.D.			N.D.		N.D.	0.110	0.196	N.D.	N.D.	N.D.		N.D.
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM		0.069	N.D.	N.D.	N.D.	N.D.	0.063	0.056	N.D.	0.190	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.064		N.D.	N.D.	N.D.	N.D.			N.D.		N.D.	0.034	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	B22 10 MM		N.D.	N.D.		N.D.	N.D.	0.073	0.046	N.D.	0.144	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		0.140	N.D.	N.D.		N.D.	N.D.			N.D.		N.D.	N.D.	0.023	N.D.	N.D.	N.D.	N.D.	N.D.
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec			92.5								87.5								
MS %Rec			93.4								66.5								
MSD %Rec			96.5								68.2								

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	42	44	45	46	47	48	49	51	52	53	54	56	59	60	63	64	66	67/100
1	B22 1R MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.049	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.226	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.163	N.D.
2	B22 2 MM		2.140	0.182	N.D.			1.642	N.D.			N.D.		N.D.		N.D.			0.130
		0.189			N.D.	0.438	0.265		N.D.	5.233		N.D.	0.406	N.D.	0.134	N.D.	0.629	1.487	
3	B22 3 MM		0.678	0.045	N.D.			0.502	N.D.			N.D.		N.D.	N.D.	N.D.			N.D.
		0.050			N.D.	0.175	0.095		N.D.	1.390		N.D.	0.065	N.D.	N.D.	N.D.	0.119	0.426	N.D.
4	B22 4 MM	N.D.	0.170	N.D.	N.D.		N.D.	0.262	N.D.			N.D.	0.047	N.D.	N.D.	N.D.			N.D.
		N.D.		N.D.	N.D.	0.073	N.D.		N.D.	0.606		N.D.		N.D.	N.D.	N.D.	0.054	0.152	N.D.
5	B22 5 MM	N.D.	0.121	0.043	N.D.		N.D.	0.116	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		N.D.			N.D.	0.052	N.D.		N.D.	0.364		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.080	N.D.
6	B22 6 MM	N.D.	0.614	N.D.	N.D.	N.D.	N.D.	0.726	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	1.685	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.314	N.D.
7	B22 7MM	N.D.	0.142	N.D.	N.D.			0.195	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
		N.D.		N.D.	N.D.	0.076	0.052		N.D.	0.548		N.D.	N.D.	N.D.	N.D.	N.D.	0.060	0.261	N.D.
7DUP	B22 7 MM DUP		2.735	0.176	0.217			1.941	N.D.			N.D.		N.D.		N.D.			N.D.
		0.335				0.719	0.235		N.D.	5.832		N.D.	0.386	N.D.	0.122	N.D.	0.710	1.501	N.D.
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.053	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM	N.D.	0.136	N.D.	N.D.			0.224	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
		N.D.		N.D.	N.D.	0.078	0.050		N.D.	0.448	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.059	0.186	N.D.
10	B22 10 MM	N.D.	0.083	N.D.	N.D.			0.198	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
		N.D.		N.D.	N.D.	0.042	0.048		N.D.	0.447		N.D.	N.D.	N.D.	N.D.	N.D.	0.059	0.318	N.D.
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec			95.5							88.0								92.5	
MS %Rec			76.4							75.6								65.6	
MSD %Rec			71.1							63.6								72.2	

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	69	70	71	73	74	75	77	81/117	82	83	84	85	87/115	90/101	91	92	93	95
1	B22 1R MM	0.112	0.103	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.040	N.D.	N.D.	N.D.	0.131		0.065	N.D.	N.D.	
				N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		0.556		N.D.	N.D.	0.568
2	B22 2 MM	0.157	2.900		N.D.	N.D.			0.238	1.025	0.952	2.049	1.267	2.723		1.235	1.762		
				0.364	N.D.	N.D.	0.050	0.116							7.122			0.148	8.810
3	B22 3 MM	0.039	0.508		N.D.	N.D.		N.D.	0.050	0.189	0.196	0.447	0.249	0.436		0.275	0.348		
				0.119	N.D.	N.D.	0.042	N.D.							1.407			0.098	1.979
4	B22 4 MM	N.D.	0.209			N.D.			0.049	0.092	0.061	0.245	0.201	0.266		0.166	0.268		
		N.D.		0.056	0.036	N.D.	0.061	0.038							0.999			0.056	1.142
5	B22 5 MM	N.D.	0.099	N.D.	N.D.	N.D.		N.D.	N.D.	0.040	0.028	0.142	N.D.	0.130		0.092	0.076	N.D.	
		N.D.		N.D.	N.D.	N.D.	0.076	N.D.	N.D.				N.D.		0.407			N.D.	0.585
6	B22 6 MM	N.D.	0.582	N.D.	N.D.	N.D.	N.D.	N.D.	0.128	0.297	0.130	0.637	0.482	1.031		0.426	0.474		
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.							2.749			N.D.	3.158
7	B22 7MM	N.D.	0.135		N.D.	N.D.	N.D.	N.D.	N.D.	0.054	N.D.	0.159	N.D.	0.154		0.103	0.132	N.D.	
		N.D.		0.050	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.		0.559			N.D.	0.788
7DUP	B22 7 MM DUP	0.052	2.679		N.D.	N.D.			0.269	1.054	0.784	2.694	1.400	2.916		1.279	1.378		
				0.403	N.D.	N.D.	0.226	0.097							7.101			0.114	9.754
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.053	N.D.	N.D.	N.D.	0.057
9	B22 9 MM	0.034	0.183		N.D.	N.D.		N.D.	0.041	0.089	N.D.	0.230	0.172	0.261		0.196	N.D.		
				0.040	N.D.	N.D.	0.036	N.D.			N.D.				0.914		N.D.	0.101	1.165
10	B22 10 MM	0.038	0.151		N.D.				0.047	N.D.	N.D.	0.129	N.D.	0.133		0.117	N.D.		
				0.041	N.D.	0.120	0.043	0.096		N.D.	N.D.		N.D.		0.581		N.D.	0.071	0.568
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec														80.5	88.0				
MS %Rec														92.5	100.0				
MSD %Rec														77.5	83.3				

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	97	99	103	104	105/132/153	107	110	114	118	119	122	123	124	126	128	129	130	131
1	B22 1R MM	0.147	N.D. N.D.	0.062	0.057	0.750	N.D. N.D.	0.675	0.039	0.363	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	0.092	0.067	0.043	N.D. N.D.
2	B22 2 MM	2.459	2.964	0.160	N.D. N.D.	9.200	0.549	9.441	N.D. N.D.	5.810	0.229	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	1.385	0.381	0.454	0.307
3	B22 3 MM	0.492	0.566	0.042	0.060	1.790	0.100	1.740	N.D. N.D.	0.928	0.057	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	0.251	0.072	0.067	0.055
4	B22 4 MM	0.343	0.410	0.052	0.054	2.630	0.101	1.131	N.D. N.D.	1.063	0.037	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	0.372	0.089	0.117	0.051
5	B22 5 MM	0.154	0.180	N.D. N.D.	N.D. N.D.	0.567	N.D. N.D.	0.440	N.D. N.D.	0.271	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	0.084	N.D. N.D.	N.D. N.D.	N.D. N.D.
6	B22 6 MM	1.005	1.332	N.D. N.D.	N.D. N.D.	5.620	0.188	3.808	0.119	2.783	0.072	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	0.806	0.225	0.228	0.155
7	B22 7MM	0.154	0.191	N.D. N.D.	0.117	0.633	N.D. N.D.	0.572	N.D. N.D.	0.351	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	0.059	N.D. N.D.	N.D. N.D.	N.D. N.D.
7DUP	B22 7 MM DUP	2.799	3.254	0.125	0.212	9.380	0.390	10.124	N.D. N.D.	4.673	0.212	N.D. N.D.	0.093	N.D. N.D.	N.D. N.D.	1.217	0.327	0.377	0.192
8	B22 8 MM	N.D. N.D.	0.029	N.D. N.D.	N.D. N.D.	0.142	N.D. N.D.	0.056	N.D. N.D.	0.129	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	0.026	N.D. N.D.	N.D. N.D.	N.D. N.D.
9	B22 9 MM	0.342	0.309	N.D. N.D.	0.130	1.950	N.D. N.D.	1.081	N.D. N.D.	0.538	0.039	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	0.202	0.041	0.066	N.D. N.D.
10	B22 10 MM	0.153	0.176	0.046	0.043	0.722	0.073	2.423	N.D. N.D.	0.400	N.D. N.D.	N.D. N.D.	0.039	N.D. N.D.	N.D. N.D.	0.102	N.D. N.D.	N.D. N.D.	N.D. N.D.
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec								107.0											
MS %Rec								91.7											
MSD %Rec								66.6											

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	134	135	136	137	138/163	141	144	146	147	149	151	154	156	157	158	164	165	167
1	B22 1R MM	N.D.		0.152	0.048			N.D.	0.081	N.D.	0.130	0.056	N.D.	0.038	N.D.	0.081	N.D.	N.D.	N.D.
		N.D.	0.094			0.528	0.085	N.D.		N.D.			N.D.		N.D.		N.D.	N.D.	N.D.
2	B22 2 MM	0.396		0.872	0.481				0.806	0.185	1.448	0.833	N.D.	0.842		0.902		N.D.	0.437
			1.008			6.943	1.075	0.098					N.D.				0.390	N.D.	
3	B22 3 MM	0.072		0.198	0.067			N.D.	0.154	0.037	0.269	0.197	N.D.	0.118		0.087		N.D.	0.058
			0.279			1.184	0.175	N.D.					N.D.				0.062	N.D.	
4	B22 4 MM	0.089		0.278	0.119			N.D.	0.260	0.045	0.604	0.351	N.D.	0.245		0.192		N.D.	0.111
			0.285			1.887	0.308	N.D.					N.D.				0.093	N.D.	
5	B22 5 MM	0.026		0.178	N.D.			N.D.	0.047	N.D.	0.162	0.061	N.D.	N.D.		0.033	N.D.	N.D.	N.D.
			0.055		N.D.	0.360	0.065	N.D.		N.D.			N.D.	N.D.			N.D.	N.D.	N.D.
6	B22 6 MM	0.206		0.381	0.297			N.D.	0.420	0.083	1.060	0.459	N.D.	0.541		0.416		N.D.	0.189
			0.501			3.927	0.749	N.D.					N.D.				0.179	N.D.	
7	B22 7MM	N.D.		N.D.	N.D.			N.D.	0.063	N.D.	0.120	0.076	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	0.102	N.D.	N.D.	0.388	0.073	N.D.		N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP	0.414		0.972	0.373				0.620	0.172	1.188	0.780	N.D.	0.630		0.612		N.D.	0.211
			0.838			5.767	0.894	0.083					N.D.				0.293	N.D.	
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	0.055	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	0.125	0.026	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM	0.074		N.D.	0.047			N.D.	0.195	0.037	0.501	0.292	N.D.	0.088		0.111		N.D.	0.061
			0.284	N.D.		1.331	0.360	N.D.					N.D.				0.077	N.D.	
10	B22 10 MM	N.D.		N.D.	N.D.			N.D.	0.076	N.D.	0.174	0.088	N.D.	0.080		0.031	N.D.	N.D.	0.052
		N.D.	0.079	N.D.	N.D.	0.540	0.089	N.D.		N.D.			N.D.				N.D.	N.D.	
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec						95.0	103.0					91.0							
MS %Rec						123.0	82.1					69.1							
MSD %Rec						134.0	89.8					79.4							

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	170	171	172	173	174	175	176	177	178	179	180	183	185	187	189	190	191	193
1	B22 1R MM			N.D.	N.D.	0.064	N.D.	0.034	N.D.	0.065		0.185	0.051	N.D.	0.106	N.D.	N.D.	N.D.	N.D.
		0.086	0.036	N.D.	N.D.		N.D.		N.D.		0.140			N.D.		N.D.	N.D.	N.D.	N.D.
2	B22 2 MM			0.117	N.D.	0.822	0.072	0.173	0.494	0.230		1.380	0.528	0.200	0.977	N.D.		N.D.	0.118
		0.858	0.306		N.D.						0.573					N.D.	0.164	N.D.	
3	B22 3 MM			N.D.	N.D.	0.175	N.D.	0.053	0.132	0.087		0.414	0.133	0.056	0.305	N.D.		N.D.	N.D.
		0.147	0.059	N.D.	N.D.		N.D.				0.192					N.D.	0.179	N.D.	N.D.
4	B22 4 MM			N.D.	N.D.	0.366	0.028	0.100	0.233	0.131		0.810	0.332	0.052	0.717	N.D.		N.D.	0.051
		0.332	0.121	N.D.	N.D.						0.502					N.D.	0.061	N.D.	
5	B22 5 MM			N.D.	N.D.	0.140	N.D.	0.031	0.075	0.060		0.317	0.105	N.D.	0.198	N.D.	N.D.	N.D.	N.D.
		0.095	0.037	N.D.	N.D.		N.D.				0.137			N.D.		N.D.	N.D.	N.D.	N.D.
6	B22 6 MM			N.D.	N.D.	0.694	N.D.	0.101	0.326	0.121		1.589	0.482	0.118	1.102	N.D.		N.D.	0.060
		0.496	0.144	N.D.	N.D.		N.D.				0.515					N.D.	0.086	N.D.	
7	B22 7MM		N.D.	N.D.	N.D.	0.074	N.D.	N.D.	N.D.	N.D.		0.157	0.063	N.D.	0.090	N.D.	N.D.	N.D.	N.D.
		0.058	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.087			N.D.		N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP			N.D.	N.D.	0.472	0.052	0.144	0.316	0.171		0.866	0.319	0.161	0.661	N.D.		N.D.	0.047
		0.543	0.199	N.D.	N.D.						0.422					N.D.	0.051	N.D.	
8	B22 8 MM		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.074	N.D.	N.D.	0.030	N.D.	N.D.	N.D.	N.D.
		0.031	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.041		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
9	B22 9 MM			N.D.	N.D.	0.429	0.065	0.125	0.238	0.100		0.775	0.274	0.048	0.637	N.D.	N.D.	N.D.	0.049
		0.332	0.115	N.D.	N.D.						0.371					N.D.	N.D.	N.D.	
10	B22 10 MM			0.035	N.D.	0.054	N.D.	N.D.	0.060	0.046		0.244	0.063	0.361	0.112	N.D.	N.D.	N.D.	N.D.
		0.070	0.259		N.D.		N.D.	N.D.			0.080					N.D.	N.D.	N.D.	N.D.
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec		100.0										86.0	95.0		85.0				
MS %Rec		68.8										73.2	70.6		75.0				
MSD %Rec		79.4										119.0	89.8		112.0				

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Station	Sample ID	194	195	196	197	199	200	201	202	203	205	206	207	208
1	B22 1R MM	0.058	N.D.	N.D.	N.D.	0.082	N.D.	N.D.			N.D.	0.131	N.D.	
			N.D.	N.D.	N.D.		N.D.	N.D.	0.043	0.053	N.D.		N.D.	0.039
2	B22 2 MM	0.406			N.D.	0.457		N.D.			N.D.	0.321	N.D.	
			0.148	0.237	N.D.		0.116	N.D.	0.166	0.299	N.D.		N.D.	0.175
3	B22 3 MM	0.175			N.D.	0.223		N.D.			N.D.	0.228	N.D.	
			0.101	0.102	N.D.		0.040	N.D.	0.105	0.139	N.D.		N.D.	0.149
4	B22 4 MM	0.251			N.D.	0.386		N.D.			N.D.	0.206	0.035	
			0.085	0.190	N.D.		0.074	N.D.	0.147	0.230	N.D.			0.091
5	B22 5 MM	0.263			N.D.	0.329		N.D.			N.D.	0.291	0.058	
			0.105	0.154	N.D.		0.063	N.D.	0.106	0.242	N.D.			0.100
6	B22 6 MM	0.709			N.D.	1.003		0.151			N.D.	0.531	0.082	
			0.198	0.428	N.D.		0.155		0.281	0.701	N.D.			0.207
7	B22 7MM	N.D.	N.D.		N.D.	0.048	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	0.058	N.D.		N.D.	N.D.	N.D.	0.062	N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP	0.254			N.D.	0.290		0.058			N.D.	0.191	N.D.	
			0.072	0.134	N.D.		0.060		0.114	0.172	N.D.		N.D.	0.177
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM	0.217			N.D.	0.325		0.051			N.D.	0.184	N.D.	
			0.063	0.146	N.D.		0.070		0.114	0.175	N.D.		N.D.	0.096
10	B22 10 MM	0.106	N.D.		N.D.	0.085	N.D.	N.D.	N.D.	N.D.	N.D.	0.093	N.D.	
			N.D.	0.043	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.075
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec												78.5		
MS %Rec												64.0		
MSD %Rec												79.5		

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

Units = ng/g
cannot be resolved due to coelutions on both columns
J value < reporting limit but > detection limit

Station	Sample ID	%Debris	Report Limit	Detection Limit	1	3	4	5	6	7	8	9	10	12	13	14	15/16
1	B22 1R MM	0.335	0.203	0.051	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			0.203	0.051	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B22 2 MM	0.101	0.178	0.045	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			0.178	0.045	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.172
3	B22 3 MM	0.305	0.213	0.053	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			0.213	0.053	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.141
4	B22 4 MM	0.509	0.216	0.054	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			0.216	0.054	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.094
5	B22 5 MM	0.455	0.187	0.047	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			0.187	0.047	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.051
6	B22 6 MM	0.457	0.247	0.062	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			0.247	0.062	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7	B22 7MM	0.466	0.309	0.077	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			0.309	0.077	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP	0.217	0.235	0.059	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			0.235	0.059	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.313
8	B22 8 MM	0.626	0.281	0.070	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			0.281	0.070	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM	0.436	0.25	0.063	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
			0.25	0.063	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.139
10	B22 10 MM	0.647	0.348	0.087	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
			0.348	0.087	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids
and % debris

Station	Sample ID	17	18	19	20	22	24	25	26	27	28/31	29	32	33	34	35	37	40	41
1	B22 1R MM		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.304	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.143	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B22 2 MM		0.214	N.D.		N.D.	N.D.	0.294	0.255	N.D.	1.305	0.245			N.D.	N.D.	N.D.		N.D.
		0.557		N.D.		N.D.	N.D.			N.D.			0.090	0.206	N.D.	N.D.	N.D.	0.179	N.D.
3	B22 3 MM		0.123	N.D.		N.D.	N.D.	0.082	0.078	N.D.	0.502	N.D.			N.D.	N.D.	N.D.	0.059	N.D.
		0.582		N.D.		N.D.	N.D.			N.D.		N.D.	0.118	0.067	N.D.	N.D.	N.D.		N.D.
4	B22 4 MM		0.133	N.D.		N.D.	N.D.	0.079	N.D.	N.D.	0.303	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.
		0.220		N.D.		N.D.	N.D.		N.D.	N.D.		N.D.	0.069	0.063	N.D.	N.D.	N.D.	N.D.	N.D.
5	B22 5 MM		0.057	N.D.		N.D.	N.D.	0.063	0.056	N.D.	0.190	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.099		N.D.		N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B22 6 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.202	0.146	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7	B22 7MM		0.102	N.D.	N.D.	N.D.	N.D.	0.082	0.108	N.D.	0.248	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.175		N.D.	N.D.	N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP		0.417	N.D.		0.169	N.D.	0.265	0.337	N.D.	0.876	N.D.			N.D.	N.D.	N.D.	0.191	N.D.
		0.679		N.D.			N.D.			N.D.		N.D.	0.141	0.250	N.D.	N.D.	N.D.		N.D.
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM		0.123	N.D.	N.D.	N.D.	N.D.	0.112	0.100	N.D.	0.337	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		0.113		N.D.	N.D.	N.D.	N.D.			N.D.		N.D.	0.061	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	B22 10 MM		N.D.	N.D.		N.D.	N.D.	0.207	0.130	N.D.	0.408	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
		0.395	N.D.	N.D.		N.D.	N.D.			N.D.		N.D.	N.D.	0.065	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

**Corrected for % solids
and % debris**

Station	Sample ID	42	44	45	46	47	48	49	51	52	53	54	56	59	60	63	64	66	67/100
1	B22 1R MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.074	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.339	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.245	N.D.
2	B22 2 MM		2.381	0.202	N.D.			1.826	N.D.			N.D.		N.D.		N.D.			0.144
		0.210			N.D.	0.487	0.295		N.D.	5.822		N.D.	0.451	N.D.	0.150	N.D.	0.700	1.654	
3	B22 3 MM		0.975	0.065	N.D.			0.723	N.D.			N.D.		N.D.	N.D.	N.D.			N.D.
		0.071			N.D.	0.252	0.137		N.D.	2.001		N.D.	0.094	N.D.	N.D.	N.D.	0.171	0.613	N.D.
4	B22 4 MM	N.D.	0.346	N.D.	N.D.		N.D.	0.534	N.D.			N.D.	0.095	N.D.	N.D.	N.D.			N.D.
		N.D.		N.D.	N.D.	0.149	N.D.		N.D.	1.234		N.D.		N.D.	N.D.	N.D.	0.109	0.310	N.D.
5	B22 5 MM	N.D.	0.223	0.079	N.D.		N.D.	0.212	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		N.D.			N.D.	0.096	N.D.		N.D.	0.668		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.148	N.D.
6	B22 6 MM	N.D.	1.132	N.D.	N.D.	N.D.	N.D.	1.338	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.
		N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	3.106	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.579	N.D.
7	B22 7MM	N.D.	0.265	N.D.	N.D.			0.366	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
		N.D.		N.D.	N.D.	0.142	0.097		N.D.	1.027		N.D.	N.D.	N.D.	N.D.	N.D.	0.112	0.489	N.D.
7DUP	B22 7 MM DUP		3.493	0.225	0.277			2.479	N.D.			N.D.		N.D.		N.D.			N.D.
		0.428				0.919	0.300		N.D.	7.449		N.D.	0.493	N.D.	0.156	N.D.	0.907	1.917	N.D.
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.141	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM	N.D.	0.242	N.D.	N.D.			0.397	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
		N.D.		N.D.	N.D.	0.138	0.089		N.D.	0.794	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.105	0.330	N.D.
10	B22 10 MM	N.D.	0.236	N.D.	N.D.			0.560	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.			N.D.
		N.D.		N.D.	N.D.	0.119	0.136		N.D.	1.265		N.D.	N.D.	N.D.	N.D.	N.D.	0.168	0.899	N.D.

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

Station	Sample ID	69	70	71	73	74	75	77	81/117	82	83	84	85	87/115	90/101	91	92	93	95
1	B22 1R MM	0.168	0.155	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.059	N.D.	N.D.	N.D.	0.196		0.097	N.D.	N.D.	
				N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.		0.836		N.D.	N.D.	0.855
2	B22 2 MM	0.174	3.226		N.D.	N.D.			0.265	1.140	1.059	2.280	1.410	3.029		1.374	1.960		
				0.404	N.D.	N.D.	0.056	0.129							7.923			0.165	9.801
3	B22 3 MM	0.057	0.732		N.D.	N.D.		N.D.	0.072	0.272	0.282	0.643	0.359	0.627		0.396	0.501		
				0.171	N.D.	N.D.	0.060	N.D.							2.025			0.141	2.848
4	B22 4 MM	N.D.	0.426			N.D.			0.100	0.187	0.125	0.498	0.410	0.542		0.338	0.547		
		N.D.		0.115	0.074	N.D.	0.125	0.077							2.036			0.114	2.327
5	B22 5 MM	N.D.	0.181	N.D.	N.D.	N.D.		N.D.	N.D.	0.074	0.051	0.260	N.D.	0.238		0.169	0.140	N.D.	
		N.D.		N.D.	N.D.	N.D.	0.139	N.D.	N.D.				N.D.		0.747			N.D.	1.072
6	B22 6 MM	N.D.	1.073	N.D.	N.D.	N.D.	N.D.	N.D.	0.235	0.548	0.240	1.173	0.888	1.900		0.784	0.874		
		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.							5.067			N.D.	5.822
7	B22 7MM	N.D.	0.253		N.D.	N.D.	N.D.	N.D.	N.D.	0.102	N.D.	0.298	N.D.	0.288		0.193	0.247	N.D.	
		N.D.		0.093	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.		1.047			N.D.	1.475
7DUP	B22 7 MM DUP	0.067	3.421		N.D.	N.D.			0.343	1.346	1.001	3.441	1.788	3.725		1.633	1.759		
				0.514	N.D.	N.D.	0.289	0.123							9.070			0.146	12.458
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.142	N.D.	N.D.	N.D.	0.153
9	B22 9 MM	0.061	0.325		N.D.	N.D.		N.D.	0.073	0.157	N.D.	0.407	0.304	0.463		0.347	N.D.		
				0.072	N.D.	N.D.	0.064	N.D.			N.D.				1.620		N.D.	0.178	2.065
10	B22 10 MM	0.107	0.426		N.D.				0.134	N.D.	N.D.	0.365	N.D.	0.377		0.332	N.D.		
				0.115	N.D.	0.340	0.122	0.272		N.D.	N.D.		N.D.		1.645		N.D.	0.200	1.608

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids
and % debris

Station	Sample ID	97	99	103	104	105	107	110	114	118	119	122	123	124	126	128	129	130	131
1	B22 1R MM	0.221	N.D.	0.093	0.085	1.130	N.D.	1.015	0.059	0.545	N.D.	N.D.	N.D.	N.D.	N.D.	0.138	0.101	0.065	N.D.
			N.D.				N.D.				N.D.	N.D.	N.D.	N.D.	N.D.				N.D.
2	B22 2 MM	2.736	3.297	0.179	N.D.	10.240	0.611	10.503	N.D.	6.464	0.255	N.D.	N.D.	N.D.	N.D.	1.541	0.424	0.506	0.341
					N.D.				N.D.			N.D.	N.D.	N.D.	N.D.				
3	B22 3 MM	0.708	0.815	0.061	0.086	2.580	0.144	2.505	N.D.	1.335	0.082	N.D.	N.D.	N.D.	N.D.	0.362	0.103	0.097	0.079
									N.D.			N.D.	N.D.	N.D.	N.D.				
4	B22 4 MM	0.698	0.835	0.106	0.110	5.360	0.206	2.304	N.D.	2.165	0.075	N.D.	N.D.	N.D.	N.D.	0.757	0.181	0.238	0.104
									N.D.			N.D.	N.D.	N.D.	N.D.				
5	B22 5 MM	0.282	0.331	N.D.	N.D.	1.040	N.D.	0.807	N.D.	0.496	N.D.	N.D.	N.D.	N.D.	N.D.	0.153	N.D.	N.D.	N.D.
				N.D.	N.D.		N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.
6	B22 6 MM	1.852	2.455	N.D.	N.D.	10.350	0.347	7.019	0.219	5.130	0.133	N.D.	N.D.	N.D.	N.D.	1.485	0.415	0.421	0.286
				N.D.	N.D.							N.D.	N.D.	N.D.	N.D.				
7	B22 7MM	0.289	0.358	N.D.	0.219	1.190	N.D.	1.071	N.D.	0.657	N.D.	N.D.	N.D.	N.D.	N.D.	0.111	N.D.	N.D.	N.D.
				N.D.			N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP	3.575	4.156	0.160	0.270	11.990	0.498	12.930	N.D.	5.968	0.271	N.D.		N.D.	N.D.	1.555	0.417	0.481	0.246
									N.D.			N.D.	0.119	N.D.	N.D.				
8	B22 8 MM	N.D.	0.077	N.D.	N.D.	0.380	N.D.	0.151	N.D.	0.345	N.D.	N.D.	N.D.	N.D.	N.D.	0.070	N.D.	N.D.	N.D.
		N.D.		N.D.	N.D.		N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.
9	B22 9 MM	0.607	0.548	N.D.	0.231	3.460	N.D.	1.917	N.D.	0.955	0.070	N.D.	N.D.	N.D.	N.D.	0.358	0.073	0.117	N.D.
				N.D.			N.D.		N.D.			N.D.	N.D.	N.D.	N.D.				N.D.
10	B22 10 MM	0.433	0.498	0.129	0.121	2.050	0.206	6.857	N.D.	1.130	N.D.	N.D.		N.D.	N.D.	0.287	N.D.	N.D.	N.D.
									N.D.		N.D.	N.D.	0.111	N.D.	N.D.		N.D.	N.D.	N.D.

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

**Corrected for % solids
and % debris**

Station	Sample ID	134	135	136	137	138/163	141	144	146	147	149	151	154	156	157	158	164	165	167
1	B22 1R MM	N.D.		0.229	0.072			N.D.	0.122	N.D.	0.196	0.084	N.D.	0.057	N.D.	0.121	N.D.	N.D.	N.D.
		N.D.	0.142			0.795	0.128	N.D.		N.D.			N.D.		N.D.		N.D.	N.D.	N.D.
2	B22 2 MM	0.441		0.970	0.535				0.896	0.206	1.611	0.927	N.D.	0.937		1.003		N.D.	0.486
			1.121			7.724	1.196	0.109					N.D.				0.434	N.D.	
3	B22 3 MM	0.103		0.285	0.096			N.D.	0.222	0.053	0.388	0.283	N.D.	0.170		0.126		N.D.	0.083
			0.401			1.704	0.251	N.D.					N.D.				0.089	N.D.	
4	B22 4 MM	0.181		0.566	0.242			N.D.	0.529	0.091	1.231	0.715	N.D.	0.499		0.391		N.D.	0.227
			0.580			3.845	0.629	N.D.					N.D.				0.190	N.D.	
5	B22 5 MM	0.048		0.327	N.D.			N.D.	0.086	N.D.	0.297	0.113	N.D.	N.D.		0.060	N.D.	N.D.	N.D.
			0.100		N.D.	0.661	0.119	N.D.		N.D.			N.D.	N.D.			N.D.	N.D.	N.D.
6	B22 6 MM	0.379		0.702	0.547			N.D.	0.775	0.152	1.954	0.846	N.D.	0.996		0.767		N.D.	0.349
			0.924			7.239	1.381	N.D.					N.D.				0.330	N.D.	
7	B22 7MM	N.D.		N.D.	N.D.			N.D.	0.119	N.D.	0.224	0.142	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	0.192	N.D.	N.D.	0.727	0.136	N.D.		N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP	0.529		1.241	0.476				0.792	0.219	1.517	0.996	N.D.	0.805		0.782		N.D.	0.270
			1.070			7.365	1.142	0.106					N.D.				0.374	N.D.	
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.	N.D.	0.147	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	0.334	0.069	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM	0.132		N.D.	0.083			N.D.	0.345	0.066	0.888	0.518	N.D.	0.156		0.196		N.D.	0.109
			0.503	N.D.		2.360	0.638	N.D.					N.D.				0.137	N.D.	
10	B22 10 MM	N.D.		N.D.	N.D.			N.D.	0.215	N.D.	0.493	0.250	N.D.	0.226		0.089	N.D.	N.D.	0.147
		N.D.	0.224	N.D.	N.D.	1.528	0.251	N.D.		N.D.			N.D.				N.D.	N.D.	

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

Station	Sample ID	170	171	172	173	174	175	176	177	178	179	180	183	185	187	189	190	191	193
1	B22 1R MM			N.D.	N.D.	0.096	N.D.	0.051	N.D.	0.098		0.278	0.077	N.D.	0.159	N.D.	N.D.	N.D.	N.D.
		0.129	0.054	N.D.	N.D.		N.D.		N.D.		0.210			N.D.		N.D.	N.D.	N.D.	N.D.
2	B22 2 MM			0.130	N.D.	0.914	0.081	0.193	0.550	0.256		1.536	0.588	0.223	1.087	N.D.		N.D.	0.132
		0.955	0.340		N.D.						0.638					N.D.	0.182	N.D.	
3	B22 3 MM			N.D.	N.D.	0.251	N.D.	0.077	0.190	0.126		0.596	0.192	0.081	0.439	N.D.		N.D.	N.D.
		0.211	0.085	N.D.	N.D.		N.D.				0.277					N.D.	0.258	N.D.	N.D.
4	B22 4 MM			N.D.	N.D.	0.745	0.056	0.204	0.475	0.268		1.650	0.676	0.106	1.460	N.D.		N.D.	0.104
		0.676	0.246	N.D.	N.D.						1.024					N.D.	0.125	N.D.	
5	B22 5 MM			N.D.	N.D.	0.256	N.D.	0.057	**0.138**	0.110		0.581	0.193	N.D.	0.363	N.D.	N.D.	N.D.	N.D.
		0.175	0.068	N.D.	N.D.		N.D.				0.251			N.D.		N.D.	N.D.	N.D.	N.D.
6	B22 6 MM			N.D.	N.D.	1.279	N.D.	0.187	0.602	0.224		2.929	0.888	0.217	2.031	N.D.		N.D.	0.110
		0.913	0.265	N.D.	N.D.		N.D.				0.949					N.D.	0.159	N.D.	
7	B22 7MM		N.D.	N.D.	N.D.	0.138	N.D.	N.D.	N.D.	N.D.		0.295	0.119	N.D.	0.169	N.D.	N.D.	N.D.	N.D.
		0.108	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.163			N.D.		N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP			N.D.	N.D.	0.603	0.067	0.184	0.403	0.218		1.106	0.407	0.205	0.845	N.D.		N.D.	0.060
		0.693	0.255	N.D.	N.D.						0.539					N.D.	0.065	N.D.	
8	B22 8 MM		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.199	N.D.	N.D.	0.081	N.D.	N.D.	N.D.	N.D.
		0.084	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.110		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
9	B22 9 MM			N.D.	N.D.	0.761	0.115	0.223	0.422	0.177		1.375	0.487	0.085	1.129	N.D.	N.D.	N.D.	0.088
		0.588	0.205	N.D.	N.D.						0.657					N.D.	N.D.	N.D.	
10	B22 10 MM			0.100	N.D.	0.154	N.D.	N.D.	0.168	0.129		0.691	0.179	1.021	0.317	N.D.	N.D.	N.D.	N.D.
		0.199	0.732		N.D.		N.D.	N.D.			0.225					N.D.	N.D.	N.D.	N.D.

Table 1g. Concentrations of PCBs Congeners in Sediment - 21-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

Station	Sample ID	194	195	196	197	199	200	201	202	203	205	206	207	208
1	B22 1R MM	0.087	N.D.	N.D.	N.D.	0.123	N.D.	N.D.			N.D.	0.197	N.D.	
			N.D.	N.D.	N.D.		N.D.	N.D.	0.064	0.080	N.D.		N.D.	0.059
2	B22 2 MM	0.451			N.D.	0.508		N.D.			N.D.	0.357	N.D.	
			0.165	0.264	N.D.		0.129	N.D.	0.185	0.333	N.D.		N.D.	0.194
3	B22 3 MM	0.251			N.D.	0.322		N.D.			N.D.	0.328	N.D.	
			0.145	0.147	N.D.		0.058	N.D.	0.151	0.200	N.D.		N.D.	0.215
4	B22 4 MM	0.512			N.D.	0.786		N.D.			N.D.	0.419	0.071	
			0.173	0.387	N.D.		0.151	N.D.	0.300	0.469	N.D.			0.186
5	B22 5 MM	0.482			N.D.	0.604		N.D.			N.D.	0.534	0.106	
			0.192	0.282	N.D.		0.116	N.D.	0.195	0.444	N.D.			0.184
6	B22 6 MM	1.307			N.D.	1.848		0.278			N.D.	0.978	0.151	
			0.365	0.789	N.D.		0.287		0.518	1.293	N.D.			0.381
7	B22 7MM	N.D.	N.D.		N.D.	0.090	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	0.109	N.D.		N.D.	N.D.	N.D.	0.116	N.D.	N.D.	N.D.	N.D.
7DUP	B22 7 MM DUP	0.324			N.D.	0.370		0.074			N.D.	0.244	N.D.	
			0.092	0.171	N.D.		0.076		0.145	0.220	N.D.		N.D.	0.226
8	B22 8 MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B22 9 MM	0.385			N.D.	0.576		0.091			N.D.	0.326	N.D.	
			0.112	0.259	N.D.		0.125		0.202	0.310	N.D.		N.D.	0.171
10	B22 10 MM	0.299	N.D.		N.D.	0.242	N.D.	N.D.	N.D.	N.D.	N.D.	0.262	N.D.	
			N.D.	0.121	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.212

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g dry wt basis
cannot be resolved due to coelutions on both columns
J value < reporting limit but > detection limit

Corrected for %solids

Lab ID	Sample ID	%Solids		Surrogates %Rec TMX	Surrogates %Rec 209	Report Limit	Detect Limit	1	3	4	5	6	7	8	9	10	12	13	14
5072909-1	B33-1-MM	64.2		86.9	76.9	0.204	0.051	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				75.2	89.6	0.204	0.051	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B33-2-MM	67.2		91.3	96.0	0.196	0.049	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				75.3	92.5	0.196	0.049	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3	B33-3-MM	60.3		88.4	79.0	0.216	0.054	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				73.5	93.5	0.216	0.054	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4	B33-4-MM	61.8		94.5	84.3	0.214	0.054	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				79.2	95.1	0.214	0.054	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
5	B33-5-MM	55.0		70.7	76.6	0.236	0.059	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				57.8	75.8	0.236	0.059	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM	48.3		90.4	76.5	0.264	0.066	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				75.4	87.1	0.264	0.066	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7	B33-7-MM	58.4		64.2	73.3	0.221	0.055	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				54.8	76.0	0.221	0.055	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7-dup	B33-7-MM-DUP	62.1		101.4	95.9	0.211	0.053	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				84.6	104.4	0.211	0.053	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B33-8MM	67.1		65.9	78.5	0.194	0.049	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				55.1	79.6	0.194	0.049	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B33-9-MM	63.4		95.0	81.5	0.207	0.052	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				79.0	92.5	0.207	0.052	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	B33-10-MM	64.6		110.7	95.5	0.203	0.051	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				92.4	99.4	0.203	0.051	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Blank				79.0	93.3	0.133	0.033	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec				82.3	83.3						78.5								
BSD %Rec				96.0	109.0						91.0								
MS %Rec				73.0	77.8						68.5								
MSD %Rec				82.5	85.8						71.5								

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Lab ID	Sample ID	15	16	17	18	19	20	22	24	25	26	27	28/31	29	32	33	34	35	37
5072909-1	B33-1-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B33-2-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.112	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3	B33-3-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4	B33-4-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.098	N.D.	N.D.	0.279	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
5	B33-5-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM	N.D.	N.D.	0.309	0.611	N.D.	N.D.	N.D.	N.D.	0.614	0.919	N.D.	1.016	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.			N.D.	N.D.	N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7	B33-7-MM	N.D.	N.D.	N.D.	0.062	N.D.	N.D.	N.D.	N.D.	N.D.	0.072	N.D.	0.138	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7-dup	B33-7-MM-DUP	N.D.	N.D.	0.077	0.151	N.D.	0.123	N.D.	N.D.	0.119	0.158	N.D.	0.270	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.			N.D.		N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B33-8MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B33-9-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.123	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	B33-10-MM	N.D.	N.D.	0.171	0.595	N.D.	0.162	N.D.	N.D.	0.838	2.471	N.D.	0.419	0.145	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.			N.D.		N.D.	N.D.			N.D.			N.D.	N.D.	N.D.	N.D.	N.D.
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec					70.0								77.0						
BSD %Rec					86.5								93.0						
MS %Rec					71.0								64.0						
MSD %Rec					81.0								68.0						

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Lab ID	Sample ID	40	41	42	44	45	46	47	48	49	51	52	53	54	56	59	60	63	64
5072909-1	B33-1-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B33-2-MM	N.D.	N.D.	N.D.	0.133	N.D.	N.D.	N.D.	N.D.	0.181	N.D.		0.112	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	0.338		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3	B33-3-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.029	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4	B33-4-MM	N.D.	N.D.	N.D.	0.311	0.147	N.D.		N.D.	0.535	N.D.		N.D.	N.D.	0.113	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.			N.D.	0.092	N.D.		N.D.	0.764	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
5	B33-5-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.203	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM	N.D.	N.D.	N.D.	5.083	N.D.	N.D.		N.D.	6.556	N.D.		1.429	N.D.		N.D.		N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	1.269	N.D.		N.D.	10.912		N.D.	0.560	N.D.	0.138	N.D.	1.276
7	B33-7-MM	N.D.	N.D.	N.D.	0.185	N.D.	N.D.		N.D.	0.280	N.D.		0.082	N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	0.063	N.D.		N.D.	0.489		N.D.	N.D.	N.D.	N.D.	N.D.	0.057
7-dup	B33-7-MM-DUP	0.067	N.D.		1.171	0.227	N.D.			1.630	N.D.		0.360	N.D.	0.265	N.D.	N.D.	N.D.	
			N.D.	0.112			N.D.	0.286	0.056		N.D.	2.876		N.D.		N.D.	N.D.	N.D.	0.321
8	B33-8MM	N.D.	N.D.	N.D.	0.108	N.D.	N.D.	N.D.	N.D.	0.151	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	0.250	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B33-9-MM	N.D.	N.D.	N.D.	0.178	N.D.	N.D.		N.D.	0.297	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	0.052	N.D.		N.D.	0.386	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	B33-10-MM	0.077	N.D.		1.786	0.175	N.D.		N.D.	3.492	N.D.		0.787	N.D.	0.177		N.D.	N.D.	
			N.D.	0.163			N.D.	0.547	N.D.		N.D.	5.385		N.D.		1.220	N.D.	N.D.	0.306
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec					91.5							71.5							
BSD %Rec					97.0							94.0							
MS %Rec					90.0							77.0							
MSD %Rec					95.5							91.5							

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Lab ID	Sample ID	66	67	69	70	71	73	74	75	77	81	82	83	84	85	87/115	90/101	91	92
5072909-1	B33-1-MM	0.251	N.D.	N.D.	0.442	N.D.	N.D.	0.797	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.433		N.D.	0.401
			N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		1.607	N.D.	
2	B33-2-MM		N.D.	N.D.	0.169	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	0.153	N.D.	0.150		0.092	0.133
		0.182	N.D.	N.D.		N.D.	N.D.	0.196	N.D.	N.D.	N.D.	0.089	N.D.		N.D.		0.549		
3	B33-3-MM	N.D.	N.D.	N.D.	0.619	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	0.663		N.D.	0.542
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.217	N.D.	N.D.	N.D.		1.882	N.D.	
4	B33-4-MM		N.D.	N.D.	0.409	N.D.		N.D.	N.D.	N.D.	N.D.		0.072	0.395	N.D.	0.469		0.340	0.393
		0.501	N.D.	N.D.		N.D.	0.063	N.D.	N.D.	N.D.	N.D.	0.186			N.D.		1.776		
5	B33-5-MM	N.D.	N.D.	N.D.	0.068	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.088		N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	0.106	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.289	N.D.	N.D.
6	B33-6-MM		N.D.	N.D.	5.056		N.D.	N.D.			0.522		0.911	4.793	2.675	5.163		3.173	2.644
		3.298	N.D.	N.D.		1.005	N.D.	N.D.	0.285	0.154		1.301					14.906		
7	B33-7-MM		N.D.	N.D.	0.163	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.212	N.D.	0.189		0.143	0.123
		0.120	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.073	N.D.		N.D.		0.657		
7-dup	B33-7-MM-DUP		N.D.	N.D.	1.514		N.D.	N.D.			N.D.		0.268	1.530	N.D.	1.507		1.009	0.849
		0.851	N.D.	N.D.		0.205	N.D.	N.D.	0.075	0.066	N.D.	0.491			N.D.		4.468		
8	B33-8MM		N.D.	N.D.	0.100	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.174	N.D.	0.190		0.096	0.120
		0.065	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.055	N.D.		N.D.		0.550		
9	B33-9-MM		N.D.	N.D.	0.229	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	0.298	N.D.	0.258		0.200	0.280
		0.189	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.065	N.D.	0.107	N.D.		N.D.		1.160		
10	B33-10-MM		N.D.	0.130	0.926			N.D.	N.D.		N.D.		0.178	1.308	N.D.	0.806		0.828	0.682
		0.739	N.D.			0.165	0.054	N.D.	N.D.	0.094	N.D.	0.255			N.D.		2.522		
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec		74.5														69.5	75.0		
BSD %Rec		99.0														87.0	99.0		
MS %Rec		78.5														75.5	74.0		
MSD %Rec		85.5														82.5	97.0		

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Lab ID	Sample ID	93	95	97	99	100	103	104	105	107	110	114	118	119	122	123	124	126/129	128
5072909-1	B33-1-MM	N.D.		0.607	0.685	N.D.	N.D.	N.D.	0.335	0.084	1.405	N.D.	1.405	N.D.	N.D.	N.D.	N.D.	0.148	0.377
		N.D.	1.026			N.D.	N.D.	N.D.				N.D.		N.D.	N.D.	N.D.	N.D.		
2	B33-2-MM	N.D.		0.218	0.292	N.D.	N.D.	N.D.	0.108	N.D.	0.493	N.D.	0.523	N.D.	N.D.	N.D.	N.D.	N.D.	0.128
		N.D.	0.542			N.D.	N.D.	N.D.		N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
3	B33-3-MM	N.D.		0.809	0.935	N.D.	N.D.	N.D.	0.369	0.108	2.288	N.D.	1.722	N.D.	N.D.	N.D.	N.D.	0.184	0.410
		N.D.	1.272			N.D.	N.D.	N.D.				N.D.		N.D.	N.D.	N.D.	N.D.		
4	B33-4-MM			0.657	0.878	N.D.	N.D.	N.D.	0.434	0.098	2.639	N.D.	1.504	0.082	N.D.	N.D.	N.D.	0.234	0.499
		0.077	1.257			N.D.	N.D.	N.D.				N.D.			N.D.	N.D.	N.D.		
5	B33-5-MM	N.D.		0.136	0.141	N.D.	N.D.	N.D.	N.D.	N.D.	0.172	N.D.	0.354	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	0.286			N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM			6.194	7.436	N.D.	N.D.	N.D.	2.412	0.538	11.114		9.353	0.528	N.D.	N.D.	0.291	0.789	2.964
		0.202	13.889			N.D.	N.D.	N.D.				0.172			N.D.	N.D.			
7	B33-7-MM	N.D.		0.264	0.343	N.D.	N.D.	0.338	0.084	N.D.	0.409	N.D.	0.497	N.D.	N.D.	N.D.	N.D.	N.D.	0.125
		N.D.	0.657			N.D.	N.D.			N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
7-dup	B33-7-MM-DUP			1.882	2.280	0.059	N.D.	0.462	0.657	0.195	3.169	N.D.	3.013	0.166	N.D.	N.D.	0.134	0.274	0.937
			4.108				N.D.					N.D.			N.D.	N.D.			
8	B33-8MM	N.D.		0.230	0.226	N.D.	N.D.	N.D.	0.063	N.D.	0.276	N.D.	0.390	N.D.	N.D.	N.D.	N.D.	0.093	0.126
		N.D.	0.516			N.D.	N.D.	N.D.		N.D.		N.D.		N.D.	N.D.	N.D.	N.D.		
9	B33-9-MM			0.419	0.550	N.D.	N.D.	N.D.	0.197	N.D.	0.682	N.D.	0.916	0.041	N.D.	N.D.	N.D.	0.083	0.305
		0.083	0.897			N.D.	N.D.	N.D.		N.D.		N.D.			N.D.	N.D.	N.D.		
10	B33-10-MM			0.894	1.286	0.111	0.112	0.421	0.291	0.114	2.114	N.D.	2.216	0.119	N.D.	N.D.	N.D.	0.181	0.448
			3.773									N.D.			N.D.	N.D.	N.D.		
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec											49.0								
BSD %Rec											68.5								
MS %Rec											60.5								
MSD %Rec											65.5								

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Lab ID	Sample ID	130	131	132/153	134	135	136	137	.38/163/16	141	144	146	147	149	151	154	156/157	158	165
5072909-1	B33-1-MM	N.D.	0.081	2.212	N.D.	0.327	N.D.	0.088	1.951		N.D.	0.223	N.D.	1.485	0.377	N.D.	0.216	0.158	N.D.
		N.D.			N.D.		N.D.			0.616	N.D.		N.D.			N.D.			N.D.
2	B33-2-MM	N.D.	N.D.	0.627	N.D.	0.092	N.D.	N.D.	0.563		N.D.	0.073	N.D.	0.405	0.090	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.		N.D.	N.D.		0.155	N.D.		N.D.			N.D.	N.D.	N.D.	N.D.
3	B33-3-MM	N.D.	N.D.	2.069	N.D.	0.250	N.D.	0.081	1.961		N.D.	0.202	N.D.	1.286	0.230	N.D.	N.D.	0.140	N.D.
		N.D.	N.D.		N.D.		N.D.			0.256	N.D.		N.D.			N.D.	N.D.		N.D.
4	B33-4-MM	0.115	0.076	3.027	N.D.	0.430	N.D.	0.092	2.691		N.D.	0.349	0.068	1.950	0.393	N.D.		0.220	N.D.
					N.D.		N.D.			0.257	N.D.					N.D.	0.143		N.D.
5	B33-5-MM	N.D.	N.D.	0.307	N.D.	N.D.	N.D.	N.D.	0.280		N.D.	N.D.	N.D.	0.217	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		0.148	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM	0.692	0.544	14.626	0.920	2.087	2.987	0.814	13.616			1.487	0.240	8.992	1.667	N.D.		1.171	N.D.
										1.903	0.136					N.D.	1.770		N.D.
7	B33-7-MM	N.D.	N.D.	0.616	N.D.	0.109	N.D.	N.D.	0.534		N.D.	0.066	N.D.	0.461	0.094	N.D.	N.D.	0.035	N.D.
		N.D.	N.D.		N.D.		N.D.	N.D.		0.148	N.D.		N.D.			N.D.	N.D.		N.D.
7-dup	B33-7-MM-DUP	0.195	0.213	4.326	0.202	0.632	0.620	0.231	3.948		N.D.	0.416	0.087	2.968	0.549	N.D.		0.331	N.D.
										1.267	N.D.					N.D.	0.246		N.D.
8	B33-8MM	N.D.	N.D.	0.592	N.D.	0.099	N.D.	N.D.	0.447		N.D.	0.058	N.D.	0.418	0.100	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.		N.D.	N.D.		0.271	N.D.		N.D.			N.D.	N.D.	N.D.	N.D.
9	B33-9-MM	0.072	N.D.	1.830	N.D.	0.296	0.150	0.066	1.637		N.D.	0.223	N.D.	1.230	0.311	N.D.		0.118	N.D.
			N.D.		N.D.					0.268	N.D.		N.D.			N.D.	0.083		N.D.
10	B33-10-MM	0.109	0.086	2.279	0.127	0.368	0.528	0.070	1.912		N.D.	0.216	N.D.	1.890	0.375	N.D.		0.161	N.D.
										0.385	N.D.		N.D.			N.D.	0.113		N.D.
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec				74.0					77.0	84.0					70.5				
BSD %Rec				98.5					104.0	103.5					95.5				
MS %Rec				77.5					94.0	82.5					81.0				
MSD %Rec				92.0					99.5	92.0					87.5				

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Lab ID	Sample ID	167	169	170	171	172	173	174	175	176	177	178	179	180	183	184	185	187	189
5072909-1	B33-1-MM	N.D.	N.D.			0.062	N.D.	0.472	N.D.	0.104	0.234	0.119		1.027	0.399	N.D.	0.078	0.778	N.D.
		N.D.	N.D.	0.492	0.157		N.D.		N.D.				0.266			N.D.			N.D.
2	B33-2-MM	N.D.	N.D.		N.D.	N.D.	N.D.	0.079	N.D.	N.D.	0.045	N.D.	N.D.	0.181	0.070	N.D.	N.D.	0.145	N.D.
		N.D.	N.D.	0.064	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.			N.D.	N.D.		N.D.
3	B33-3-MM	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.125	N.D.		0.477	0.155	N.D.	N.D.	0.365	N.D.
		N.D.	N.D.	0.205	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.129			N.D.	N.D.		N.D.
4	B33-4-MM	N.D.	N.D.			0.195	N.D.	1.310	N.D.	0.237	0.636	0.233		2.791	0.805	0.090	0.191	1.693	N.D.
		N.D.	N.D.	1.009	0.383		N.D.		N.D.				0.644						N.D.
5	B33-5-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.122	N.D.	N.D.	N.D.	0.086	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.072		N.D.	N.D.	N.D.		N.D.
6	B33-6-MM	0.631	N.D.			0.204	N.D.	1.460	N.D.	0.270	0.803	0.330		2.742	1.016	N.D.	0.150	1.893	0.149
			N.D.	1.574	0.453		N.D.		N.D.				0.740			N.D.			
7	B33-7-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.063	N.D.	N.D.	N.D.	N.D.		0.142	0.052	N.D.	N.D.	0.119	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.088			N.D.	N.D.		N.D.
7-dup	B33-7-MM-DUP	0.152	N.D.			0.054	N.D.	N.D.	N.D.	0.068	0.204	0.070		0.706	0.267	N.D.	0.068	0.507	N.D.
			N.D.	0.428	0.127		N.D.	N.D.	N.D.				0.213			N.D.			N.D.
8	B33-8MM	N.D.	N.D.		N.D.	N.D.	N.D.	0.122	N.D.	N.D.	N.D.	N.D.		0.223	0.094	N.D.	N.D.	0.233	N.D.
		N.D.	N.D.	0.050	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.094			N.D.	N.D.		N.D.
9	B33-9-MM	N.D.	N.D.			0.056	N.D.	0.371	0.055	0.097	0.179	0.113		0.787	0.277	N.D.	0.054	0.688	N.D.
		N.D.	N.D.	0.307	0.106		N.D.						0.281			N.D.			N.D.
10	B33-10-MM	0.082	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	0.142	0.119		0.442	0.144	N.D.	N.D.	0.428	N.D.
			N.D.	0.147	0.089	N.D.	N.D.	N.D.	N.D.	N.D.			0.180			N.D.	N.D.		N.D.
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec				77.0										80.5	75.5			76.0	
BSD %Rec				97.0										97.0	98.0			91.0	
MS %Rec				71.5										70.5	80.5			78.0	
MSD %Rec				79.0										81.5	81.0			85.5	

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for %solids

Lab ID	Sample ID	190	191	193	194	195	196	197	199	200	201	202	203	205	206	207	208
5072909-1	B33-1-MM		N.D.	N.D.	0.370			N.D.	0.417		N.D.			N.D.	0.325	N.D.	
		0.054	N.D.	N.D.		0.101	0.191	N.D.		0.141	N.D.	0.138	0.258	N.D.		N.D.	0.123
2	B33-2-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.118
3	B33-3-MM	N.D.	N.D.	N.D.	0.117		N.D.	N.D.	0.239		N.D.	N.D.		N.D.	0.260	N.D.	
		N.D.	N.D.	N.D.		0.108	N.D.	N.D.		0.144	N.D.	N.D.	0.219	N.D.		N.D.	0.201
4	B33-4-MM		N.D.	0.141	1.043			N.D.	1.240		N.D.			N.D.	0.583	0.084	
		0.116	N.D.			0.425	0.606	N.D.		0.246	N.D.	0.323	0.742	N.D.			0.209
5	B33-5-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM		N.D.	0.100	0.560			N.D.	1.089		N.D.			N.D.	0.690	0.117	
		0.151	N.D.			0.199	0.354	N.D.		0.176	N.D.	0.357	0.592	N.D.			0.280
7	B33-7-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.081	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.092
7-dup	B33-7-MM-DUP		N.D.	N.D.	0.272			N.D.	0.364		N.D.			N.D.	0.617	0.061	
		0.039	N.D.	N.D.		0.073	0.119	N.D.		0.087	N.D.	0.128	0.311	N.D.			0.341
8	B33-8MM	N.D.	N.D.	N.D.	0.121	N.D.		N.D.	0.178		N.D.			N.D.	0.213	N.D.	
		N.D.	N.D.	N.D.		N.D.	0.061	N.D.		0.038	N.D.	0.095	0.126	N.D.		N.D.	0.086
9	B33-9-MM		N.D.	N.D.	0.197			N.D.	0.293		N.D.			N.D.	0.210	N.D.	
		0.032	N.D.	N.D.		0.061	0.125	N.D.		0.061	N.D.	0.108	0.154	N.D.		N.D.	0.115
10	B33-10-MM	N.D.	N.D.	N.D.	0.120	N.D.		N.D.	0.263		N.D.			N.D.	0.234	N.D.	
		N.D.	N.D.	N.D.		N.D.	0.071	N.D.		0.060	N.D.	0.094	0.144	N.D.		N.D.	0.105
Blank		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BS %Rec															64.5		
BSD %Rec															87.0		
MS %Rec															69.0		
MSD %Rec															71.0		

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Units = ng/g dry wt basis
cannot be resolved due to coelutions on both columns
J value < reporting limit but > detection limit

Corrected for % solids and % debris

		%Solids	%Debris	%REC TMX	%Rec 209	Report Limit	Detection Limit	1	3	4	5	6	7	8	9	10	12	13	14
5072909-1	B33-1-MM	64.2	29.2	86.9	76.9	0.288	0.072	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				75.2	89.6	0.288	0.072	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B33-2-MM	67.2	45.1	91.3	96.0	0.358	0.090	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				75.3	92.5	0.358	0.090	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3	B33-3-MM	60.3	40.2	88.4	79.0	0.362	0.091	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				73.5	93.5	0.362	0.091	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4	B33-4-MM	61.8	43.5	94.5	84.3	0.380	0.095	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				79.2	95.1	0.380	0.095	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
5	B33-5-MM	55.0	44.8	70.7	76.6	0.428	0.107	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				57.8	75.8	0.428	0.107	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM	48.3	42.6	90.4	76.5	0.460	0.115	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				75.4	87.1	0.460	0.115	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7	B33-7-MM	58.4	44.1	64.2	73.3	0.395	0.099	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				54.8	76.0	0.395	0.099	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B33-7-MM-DUP	62.1	50.9	101.4	95.9	0.430	0.108	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				84.6	104.4	0.430	0.108	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B33-8MM	67.1	52.2	65.9	78.5	0.407	0.102	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				55.1	79.6	0.407	0.102	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	B33-9-MM	63.4	60.2	95.0	81.5	0.521	0.130	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				79.0	92.5	0.521	0.130	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
11	B33-10-MM	64.6	21.4	110.7	95.5	0.258	0.065	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
				92.4	99.4	0.258	0.065	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids
and % debris

		15	16	17	18	19	20	22	24	25	26	27	28/31	29	32	33	34	35	37
5072909-1	B33-1-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B33-2-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.205	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3	B33-3-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4	B33-4-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.174	N.D.	N.D.	0.496	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
5	B33-5-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM	N.D.	N.D.	0.538	1.064	N.D.	N.D.	N.D.	N.D.	1.069	1.601	N.D.	1.771	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.			N.D.	N.D.	N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
7	B33-7-MM	N.D.	N.D.	N.D.	0.111	N.D.	N.D.	N.D.	N.D.	N.D.	0.130	N.D.	0.247	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
8	B33-7-MM-DUP	N.D.	N.D.	0.157	0.307	N.D.	0.250	N.D.	N.D.	0.242	0.321	N.D.	0.550	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.			N.D.		N.D.	N.D.			N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
9	B33-8MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	B33-9-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.309	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
11	B33-10-MM	N.D.	N.D.	0.217	0.756	N.D.	0.206	N.D.	N.D.	1.066	3.141	N.D.	0.533	0.184	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.			N.D.		N.D.	N.D.			N.D.			N.D.	N.D.	N.D.	N.D.	N.D.

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

**Corrected for % solids
and % debris**

		40	41	42	44	45	46	47	48	49	51	52	53	54	56	59	60	63	64
5072909-1	B33-1-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	B33-2-MM	N.D.	N.D.	N.D.	0.244	N.D.	N.D.	N.D.	N.D.	0.330	N.D.		0.204	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	0.618		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3	B33-3-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.724	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4	B33-4-MM	N.D.	N.D.	N.D.	0.552	0.262	N.D.		N.D.	0.951	N.D.		N.D.	N.D.	0.201	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.			N.D.	0.164	N.D.		N.D.	1.357	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.
5	B33-5-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.368	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM	N.D.	N.D.	N.D.	8.856	N.D.	N.D.		N.D.	11.424	N.D.		2.489	N.D.		N.D.		N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	2.212	N.D.		N.D.	19.013		N.D.	0.976	N.D.	0.241	N.D.	2.224
7	B33-7-MM	N.D.	N.D.	N.D.	0.331	N.D.	N.D.		N.D.	0.500	N.D.		0.146	N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.		N.D.	N.D.	0.112	N.D.		N.D.	0.873		N.D.	N.D.	N.D.	N.D.	N.D.	0.102
8	B33-7-MM-DUP	0.136	N.D.		2.387	0.462	N.D.			3.321	N.D.		0.733	N.D.	0.541	N.D.	N.D.	N.D.	
			N.D.	0.227			N.D.	0.584	0.114		N.D.	5.861		N.D.		N.D.	N.D.	N.D.	0.654
9	B33-8MM	N.D.	N.D.	N.D.	0.228	N.D.	N.D.	N.D.	N.D.	0.316	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		N.D.	0.524	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
10	B33-9-MM	N.D.	N.D.	N.D.	0.448	N.D.	N.D.		N.D.	0.747	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	0.130	N.D.		N.D.	0.972	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
11	B33-10-MM	0.098	N.D.		2.269	0.222	N.D.		N.D.	4.439	N.D.		1.000	N.D.	0.225		N.D.	N.D.	
			N.D.	0.207			N.D.	0.695	N.D.		N.D.	6.844		N.D.		1.551	N.D.	N.D.	0.389

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids
and % debris

		66	67	69	70	71	73	74	75	77	81	82	83	84	85	87/115	90/101	91	92
5072909-1	B33-1-MM	0.355	N.D.	N.D.	0.624	N.D.	N.D.	1.126	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.611		N.D.	0.566
			N.D.	N.D.		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		2.269	N.D.	
2	B33-2-MM		N.D.	N.D.	0.309	N.D.	N.D.		N.D.	N.D.	N.D.		N.D.	0.280	N.D.	0.275		0.167	0.242
		0.332	N.D.	N.D.		N.D.	N.D.	0.358	N.D.	N.D.	N.D.	0.163	N.D.		N.D.		1.003		
3	B33-3-MM	N.D.	N.D.	N.D.	1.037	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	1.111		N.D.	0.909
		N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.363	N.D.	N.D.	N.D.		3.154	N.D.	
4	B33-4-MM		N.D.	N.D.	0.727	N.D.		N.D.	N.D.	N.D.	N.D.		0.128	0.701	N.D.	0.833		0.603	0.697
		0.889	N.D.	N.D.		N.D.	0.111	N.D.	N.D.	N.D.	N.D.	0.331			N.D.		3.154		
5	B33-5-MM	N.D.	N.D.	N.D.	0.123	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.160		N.D.	N.D.
		N.D.	N.D.	N.D.		N.D.	N.D.	0.193	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.525	N.D.	N.D.
6	B33-6-MM		N.D.	N.D.	8.810		N.D.	N.D.			0.909		1.587	8.352	4.660	8.996		5.529	4.606
		5.746	N.D.	N.D.		1.750	N.D.	N.D.	0.496	0.269		2.266					25.973		
7	B33-7-MM		N.D.	N.D.	0.291	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.378	N.D.	0.338		0.255	0.219
		0.215	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.130	N.D.		N.D.		1.174		
8	B33-7-MM-DUP		N.D.	N.D.	3.085		N.D.	N.D.			N.D.		0.546	3.118	N.D.	3.071		2.057	1.731
		1.733	N.D.	N.D.		0.417	N.D.	N.D.	0.153	0.135	N.D.	1.000			N.D.		9.105		
9	B33-8MM		N.D.	N.D.	0.210	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.365	N.D.	0.399		0.202	0.253
		0.136	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.116	N.D.		N.D.		1.154		
10	B33-9-MM		N.D.	N.D.	0.576	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	0.750	N.D.	0.649		0.504	0.704
		0.476	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.164	N.D.	0.269	N.D.		N.D.		2.919		
11	B33-10-MM		N.D.	0.165	1.177			N.D.	N.D.		N.D.		0.226	1.662	N.D.	1.024		1.052	0.867
		0.939	N.D.			0.210	0.069	N.D.	N.D.	0.120	N.D.	0.325			N.D.		3.205		

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

		93	**95**	**97**	**99**	**100**	**103**	**104**	**105**	**107**	**110**	**114**	**118**	**119**	**122**	**123**	**124**	**126/129**	**128**
5072909-1	B33-1-MM	N.D.		0.857	0.968	N.D.	N.D.	N.D.	0.473	0.119	1.984	N.D.	1.984	N.D.	N.D.	N.D.	N.D.	0.209	0.532
		N.D.	1.448			N.D.	N.D.	N.D.				N.D.		N.D.	N.D.	N.D.	N.D.		
2	B33-2-MM	N.D.		0.397	0.534	N.D.	N.D.	N.D.	0.197	N.D.	0.900	N.D.	0.956	N.D.	N.D.	N.D.	N.D.	N.D.	0.234
		N.D.	0.990			N.D.	N.D.	N.D.		N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
3	B33-3-MM	N.D.		1.356	1.568	N.D.	N.D.	N.D.	0.618	0.182	3.834	N.D.	2.885	N.D.	N.D.	N.D.	N.D.	0.309	0.686
		N.D.	2.132			N.D.	N.D.	N.D.				N.D.		N.D.	N.D.	N.D.	N.D.		
4	B33-4-MM			1.167	1.560	N.D.	N.D.	N.D.	0.771	0.173	4.685	N.D.	2.671	0.145	N.D.	N.D.	N.D.	0.415	0.887
		0.136	2.232			N.D.	N.D.	N.D.				N.D.			N.D.	N.D.	N.D.		
5	B33-5-MM	N.D.		0.247	0.256	N.D.	N.D.	N.D.	N.D.	N.D.	0.311	N.D.	0.641	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	0.519			N.D.	N.D.	N.D.	N.D.	N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM			10.793	12.957	N.D.	N.D.	N.D.	4.202	0.938	19.366		16.296	0.920	N.D.	N.D.	0.507	1.374	5.165
		0.352	24.201			N.D.	N.D.	N.D.				0.300			N.D.	N.D.			
7	B33-7-MM	N.D.		0.472	0.613	N.D.	N.D.	0.604	0.151	N.D.	0.730	N.D.	0.888	N.D.	N.D.	N.D.	N.D.	N.D.	0.224
		N.D.	1.175			N.D.	N.D.			N.D.		N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	
8	B33-7-MM-DUP			3.836	4.646	0.120	N.D.	0.941	1.339	0.397	6.459	N.D.	6.140	0.338	N.D.	N.D.	0.274	0.558	1.910
			8.372				N.D.					N.D.			N.D.	N.D.			
9	B33-8MM	N.D.		0.483	0.473	N.D.	N.D.	N.D.	0.133	N.D.	0.578	N.D.	0.818	N.D.	N.D.	N.D.	N.D.	0.195	0.263
		N.D.	1.083			N.D.	N.D.	N.D.		N.D.		N.D.		N.D.	N.D.	N.D.	N.D.		
10	B33-9-MM			1.055	1.385	N.D.	N.D.	N.D.	0.496	N.D.	1.718	N.D.	2.304	0.103	N.D.	N.D.	N.D.	0.209	0.767
		0.209	2.257			N.D.	N.D.	N.D.		N.D.		N.D.			N.D.	N.D.	N.D.		
11	B33-10-MM			1.137	1.635	0.141	0.142	0.536	0.369	0.145	2.687	N.D.	2.817	0.151	N.D.	N.D.	N.D.	0.230	0.570
			4.795									N.D.			N.D.	N.D.	N.D.		

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

		130	131	132/153	134	135	136	137	.38/163/16	141	144	146	147	149	151	154	156/157	158	165
5072909-1	B33-1-MM	N.D.	0.114	3.123	N.D.	0.461	N.D.	0.124	2.754		N.D.	0.314	N.D.	2.096	0.533	N.D.		0.223	N.D.
		N.D.			N.D.		N.D.			0.870	N.D.		N.D.			N.D.	0.192		N.D.
2	B33-2-MM	N.D.	N.D.	1.145	N.D.	0.168	N.D.	N.D.	1.028		N.D.	0.132	N.D.	0.740	0.164	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.		N.D.	N.D.		0.283	N.D.		N.D.			N.D.	N.D.	N.D.	N.D.
3	B33-3-MM	N.D.	N.D.	3.468	N.D.	0.418	N.D.	0.135	3.287		N.D.	0.339	N.D.	2.156	0.386	N.D.	N.D.	0.235	N.D.
		N.D.	N.D.		N.D.		N.D.			0.429	N.D.		N.D.			N.D.	N.D.		N.D.
4	B33-4-MM	0.204	0.136	5.375	N.D.	0.763	N.D.	0.164	4.778		N.D.	0.620	0.120	3.463	0.698	N.D.		0.391	N.D.
					N.D.		N.D.			0.456	N.D.					N.D.	0.253		N.D.
5	B33-5-MM	N.D.	N.D.	0.556	N.D.	N.D.	N.D.	N.D.	0.507		N.D.	N.D.	N.D.	0.394	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.	N.D.	N.D.	N.D.		0.268	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM	1.207	0.948	25.485	1.603	3.636	5.205	1.419	23.725			2.590	0.418	15.669	2.905	N.D.		2.041	N.D.
										3.316	0.237					N.D.	3.083		N.D.
7	B33-7-MM	N.D.	N.D.	1.102	N.D.	0.195	N.D.	N.D.	0.955		N.D.	0.119	N.D.	0.824	0.167	N.D.	N.D.	0.062	N.D.
		N.D.	N.D.		N.D.		N.D.	N.D.		0.264	N.D.		N.D.			N.D.	N.D.		N.D.
8	B33-7-MM-DUP	0.397	0.433	8.816	0.412	1.288	1.264	0.470	8.047		N.D.	0.848	0.176	6.048	1.119	N.D.		0.674	N.D.
										2.581	N.D.					N.D.	0.501		N.D.
9	B33-8MM	N.D.	N.D.	1.242	N.D.	0.207	N.D.	N.D.	0.939		N.D.	0.123	N.D.	0.877	0.211	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.		N.D.		N.D.	N.D.		0.568	N.D.		N.D.			N.D.	N.D.	N.D.	N.D.
10	B33-9-MM	0.181	N.D.	4.607	N.D.	0.746	0.377	0.165	4.120		N.D.	0.560	N.D.	3.096	0.783	N.D.		0.297	N.D.
			N.D.		N.D.					0.676	N.D.		N.D.			N.D.	0.209		N.D.
11	B33-10-MM	0.138	0.110	2.897	0.162	0.468	0.671	0.089	2.430		N.D.	0.274	N.D.	2.402	0.477	N.D.		0.205	N.D.
										0.489	N.D.		N.D.			N.D.	0.143		N.D.

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids and % debris

		167	169	170	171	172	173	174	175	176	177	178	179	180	183	184	185	187	189
5072909-1	B33-1-MM	N.D.	N.D.			0.087	N.D.	0.667	N.D.	0.147	0.331	0.168		1.450	0.563	N.D.	0.110	1.098	N.D.
		N.D.	N.D.	0.695	0.221		N.D.		N.D.				0.376			N.D.			N.D.
2	B33-2-MM	N.D.	N.D.		N.D.	N.D.	N.D.	0.145	N.D.	N.D.	0.082	N.D.	N.D.	0.330	0.127	N.D.	N.D.	0.266	N.D.
		N.D.	N.D.	0.116	N.D.	N.D.	N.D.		N.D.	N.D.		N.D.	N.D.			N.D.	N.D.		N.D.
3	B33-3-MM	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.210	N.D.		0.799	0.260	N.D.	N.D.	0.612	N.D.
		N.D.	N.D.	0.344	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.216			N.D.	N.D.		N.D.
4	B33-4-MM	N.D.	N.D.			0.345	N.D.	2.326	N.D.	0.420	1.130	0.414		4.955	1.429	0.160	0.339	3.007	N.D.
		N.D.	N.D.	1.791	0.681		N.D.		N.D.				1.143						N.D.
5	B33-5-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		0.222	N.D.	N.D.	N.D.	0.157	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.130		N.D.	N.D.	N.D.		N.D.
6	B33-6-MM	1.100	N.D.			0.355	N.D.	2.544	N.D.	0.471	1.399	0.575		4.778	1.771	N.D.	0.261	3.298	0.260
			N.D.	2.743	0.789		N.D.		N.D.				1.290			N.D.			
7	B33-7-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.112	N.D.	N.D.	N.D.	N.D.		0.254	0.093	N.D.	N.D.	0.212	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.157			N.D.	N.D.		N.D.
8	B33-7-MM-DUP	0.310	N.D.			0.111	N.D.	N.D.	N.D.	0.138	0.416	0.144		1.440	0.544	N.D.	0.139	1.034	N.D.
			N.D.	0.872	0.259		N.D.	N.D.	N.D.				0.434			N.D.			N.D.
9	B33-8MM	N.D.	N.D.		N.D.	N.D.	N.D.	0.255	N.D.	N.D.	N.D.	N.D.		0.468	0.197	N.D.	N.D.	0.488	N.D.
		N.D.	N.D.	0.106	N.D.	N.D.	N.D.		N.D.	N.D.	N.D.	N.D.	0.197			N.D.	N.D.		N.D.
10	B33-9-MM	N.D.	N.D.			0.142	N.D.	0.935	0.138	0.245	0.451	0.284		1.981	0.697	N.D.	0.135	1.732	N.D.
		N.D.	N.D.	0.774	0.266		N.D.						0.707			N.D.			N.D.
11	B33-10-MM	0.104	N.D.			N.D.	N.D.	N.D.	N.D.	N.D.	0.180	0.151		0.562	0.183	N.D.	N.D.	0.544	N.D.
			N.D.	0.187	0.113	N.D.	N.D.	N.D.	N.D.	N.D.			0.229			N.D.	N.D.		N.D.

Table 1h. Concentrations of PCBs Congeners in Sediment - 33-Month Event
SPAWAR Systems Center Pacific
San Diego, California

Corrected for % solids
and % debris

		190	**191**	**193**	**194**	**195**	**196**	**197**	**199**	**200**	**201**	**202**	**203**	**205**	**206**	**207**	**208**
5072909-1	B33-1-MM		N.D.	N.D.	0.522			N.D.	0.589		N.D.			N.D.	0.459	N.D.	
		0.076	N.D.	N.D.		0.143	0.269	N.D.		0.200	N.D.	0.195	0.364	N.D.		N.D.	0.174
2	B33-2-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.215
3	B33-3-MM	N.D.	N.D.	N.D.	0.196		N.D.	N.D.	0.401		N.D.	N.D.		N.D.	0.435	N.D.	
		N.D.	N.D.	N.D.		0.181	N.D.	N.D.		0.241	N.D.	N.D.	0.367	N.D.		N.D.	0.337
4	B33-4-MM		N.D.	0.251	1.853			N.D.	2.202		N.D.			N.D.	1.036	0.149	
		0.206	N.D.			0.754	1.076	N.D.		0.437	N.D.	0.573	1.317	N.D.			0.371
5	B33-5-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
6	B33-6-MM		N.D.	0.174	0.977			N.D.	1.897		N.D.			N.D.	1.202	0.205	
		0.263	N.D.			0.346	0.617	N.D.		0.306	N.D.	0.622	1.032	N.D.			0.487
7	B33-7-MM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.145	N.D.	
		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		N.D.	0.164
8	B33-7-MM-DUP		N.D.	N.D.	0.555			N.D.	0.741		N.D.			N.D.	1.258	0.125	
		0.079	N.D.	N.D.		0.148	0.242	N.D.		0.177	N.D.	0.261	0.633	N.D.			0.694
9	B33-8MM	N.D.	N.D.	N.D.	0.254	N.D.		N.D.	0.372		N.D.			N.D.	0.447	N.D.	
		N.D.	N.D.	N.D.		N.D.	0.129	N.D.		0.080	N.D.	0.199	0.265	N.D.		N.D.	0.179
10	B33-9-MM		N.D.	N.D.	0.497			N.D.	0.738		N.D.			N.D.	0.528	N.D.	
		0.082	N.D.	N.D.		0.153	0.314	N.D.		0.153	N.D.	0.271	0.388	N.D.		N.D.	0.289
11	B33-10-MM	N.D.	N.D.	N.D.	0.152	N.D.		N.D.	0.335		N.D.			N.D.	0.297	N.D.	
		N.D.	N.D.	N.D.		N.D.	0.091	N.D.		0.076	N.D.	0.119	0.183	N.D.		N.D.	0.134

Table 2. Concentrations of Total Mercury in Sediment
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Sample ID	Method	Detect	Total Mercury (ng/g, ww)	Solids (%)	Total Mercury (ng/g, dw)	Debris (%)	Total Mercury, Debris Corrected (ng/g, ww)
Baseline	3	B3 MM Chem	EPA 7474	Yes	410	0.78	526	NM	
Baseline	3 DUP	B3 MM Chem DUP	EPA 7474	Yes	415	0.72	577	NM	
Baseline	4	B4 MM Chem	EPA 7474	Yes	121	0.57	212	NM	
Baseline	5	B5 MM Chem	EPA 7474	Yes	492	0.69	713	NM	
Baseline	8	B8 MM Chem	EPA 7474	Yes	440	0.67	657	NM	
Baseline	9	B9 MM Chem	EPA 7474	Yes	315	0.50	630	NM	
10-Month	3	B12 3 MM	EPA 7473	Yes	73.2	Not Reported		0.64	114
10-Month	4	B12 4 MM	EPA 7473	Yes	64.7	Not Reported		0.42	154
10-Month	5	B12 5 MM	EPA 7473	Yes	40.5	Not Reported		0.36	113
10-Month	7	B12 7 MM	EPA 7473	Yes	46.5	Not Reported		0.45	103
10-Month	8	B12 8 MM	EPA 7473	Yes	63.2	Not Reported		0.31	204
10-Month	9	B12 9 MM	EPA 7473	Yes	110	Not Reported		0.50	220
21-Month	3	B22 3 MM	EPA 1631E	Yes	97	Not Reported		0.70	139
21-Month	4	B22 4 MM	EPA 1631E	Yes	84	Not Reported		0.49	171
21-Month	5	B22 5 MM	EPA 1631E	Yes	48	Not Reported		0.55	87
21-Month	8	B22 8 MM	EPA 1631E	Yes	10	Not Reported		0.37	27
21-Month	9	B22 9 MM	EPA 1631E	Yes	110	Not Reported		0.56	196
33-Month	3	B33-3-MM-SedChem	EPA 7473	Yes	181	Not Reported		0.629	288
33-Month	4	B33-4-MM-SedChem	EPA 7473	Yes	235	Not Reported		0.415	566
33-Month	5	B33-5-MM-SedChem	EPA 7473	Yes	87.7	Not Reported		0.602	146
33-Month	8	B33-8-MM-SedChem	EPA 7473	Yes	221	Not Reported		0.622	355
33-Month	9	B33-9-MM-SedChem	EPA 7473	Yes	155	Not Reported		0.336	461

1.) Quality control criteria was met unless otherwise noted.
2.) In the 10-month event, the duplicate sample had a coefficient of variance greater than 15% due to the extreme heterogeneity of the sample matrix.
3.) Percent debris is referenced from the PCB sediment results except the 33-Month event. Percent debris was provided by ERDC in report from QuickSilver.
4.) µg/kg, ww = micrograms per kilogram, wet weight. dw = dry weight. NM = not measured.

Table 3. Concentrations of Methylmercury in Sediment
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	Sample ID	Method	Detect	Methylmercury (ng/g, ww)	Debris (%)	Methylmercury, Debris Corrected (ng/g, ww)
Baseline	3	B3 MM Chem	QS-LC/CVAF-001	Yes	0.233	NM	
Baseline	3-DUP	B3 MM Chem Dup	QS-LC/CVAF-001	Yes	0.096	NM	
Baseline	4	B4 MM Chem	QS-LC/CVAF-001	Yes	0.085	NM	
Baseline	5	B5 MM Chem	QS-LC/CVAF-001	Yes	0.272	NM	
Baseline	8	B8 MM Chem	QS-LC/CVAF-001	Yes	0.230	NM	
Baseline	9	B9 MM Chem	QS-LC/CVAF-001	Yes	0.141	NM	
10-Month	3	B12 3 MM	QS-LC/CVAF-001	Yes	0.320	0.64	0.50
10-Month	4	B12 4 MM	QS-LC/CVAF-001	Yes	0.172	0.42	0.41
10-Month	5	B12 5 MM	QS-LC/CVAF-001	Yes	0.0757	0.36	0.21
10-Month	7	B12 7 MM	QS-LC/CVAF-001	Yes	0.346	0.45	0.77
10-Month	8	B12 8 MM	QS-LC/CVAF-001	Yes	0.134	0.31	0.43
10-Month	9	B12 9 MM	QS-LC/CVAF-001	Yes	0.278	0.50	0.56
21-Month	3	B22 3 MM	EPA 1630	Yes	1.80	0.70	2.57
21-Month	4	B22 4 MM	EPA 1630	Yes	0.71	0.49	1.45
21-Month	5	B22 5 MM	EPA 1630	Yes	0.84	0.55	1.53
21-Month	8	B22 8 MM	EPA 1630	Yes	0.81	0.37	2.19
21-Month	9	B22 9 MM	EPA 1630	Yes	0.63	0.56	1.13
33-Month	3	B33-3-MM-SedChem	QS-LC/CVAF-001	Yes	0.819	0.629	1.30
33-Month	4	B33-4-MM-SedChem	QS-LC/CVAF-001	Yes	0.175	0.415	0.42
33-Month	5	B33-5-MM-SedChem	QS-LC/CVAF-001	Yes	1.590	0.602	2.64
33-Month	8	B33-8-MM-SedChem	QS-LC/CVAF-001	Yes	0.716	0.622	1.15
33-Month	9	B33-9-MM-SedChem	QS-LC/CVAF-001	Yes	0.448	0.336	1.33

1.) Quality control criteria was met unless otherwise noted.
2.) In the baseline, the duplicate did not correlate within the predetermined acceptance criteria (coefficient of variation greater than 15%) due to the heterogeneous nature of the sample matrix. Shell and rocks were a major component of the sediment samples.
3.) In the 10-month event, the percent difference between the matrix spike/matrix spike duplicate samples did not meet quality control criteria. This quality control failure was due to the extreme heterogeneity of the sample matrix. Fragments of shell and rock, although largely avoided by the laboratory technician, could not be completely removed from the prepared samples.
4.) In the 33-month event, the duplicate samples did not meet quality control criteria likely due to the heterogeneity of the samples.
5.) Percent debris is referenced from the PCB sediment results except the 33-Month event. Percent debris was provided by ERDC in report from QuickSilver.
6.) µg/kg, ww = micrograms per kilogram, wet weight. NM = not measured.

Table 4 Grain Size
SPAWAR Systems Center Pacific
San Diego, California

Event	Station	% Gravel	% Sand	% Silt	% Clay	Texture
Baseline	1-MM	37.5	54	6.7	1.8	Sand
Baseline	2-MM	1.6	33.3	57.4	7.7	Silt
Baseline	3-MM	67.4	29.9	1.9	0.8	Gravel
Baseline	4-MM	Sample was not obtained by diver				
Baseline	5-MM	Sample was not obtained by diver				
Baseline	6-MM	16.6	48.6	28	6.8	Sand with silt
Baseline	7-MM	4.7	24.6	50.8	19.9	Silt
Baseline	8-MM	6.9	85.5	5.2	2.4	Sand
Baseline	9-MM	6.8	71.4	17.1	4.7	Sand
Baseline	10-MM	5	86.9	5.7	2.4	Sand
10-Month	1-MM	26.6	53.8	15.4	4.2	Sand
10-Month	2-MM	26.8	48.2	20.8	4.2	Sand with gravel and silt
10-Month	3-MM	54	38.5	5.4	2.1	Gravel
10-Month	4-MM	42.2	50.4	4.8	2.6	Sand
10-Month	5-MM	39.2	49.6	7.4	3.8	Sand with gravel
10-Month	6-MM	27.8	55.5	11.3	5.4	Sand
10-Month	7-MM	26.4	55.5	12.5	5.6	Sand
10-Month	8-MM	46	47.1	4.5	2.4	Sand with gravel
10-Month	9-MM	35.6	45.7	13.6	5.1	Sand with gravel
10-Month	10-MM	7.6	58.8	27	6.6	Sand
21-Month	1-MM	48.9	34.3	12.2	4.6	Gravel with sand
21-Month	2-MM	9.3	37.7	41.1	11.9	Sand with silt
21-Month	3-MM	26.4	61.8	5.4	6.4	Sand
21-Month	4-MM	22.6	66.1	6.7	4.6	Sand
21-Month	5-MM	22.5	61.8	9	6.7	Sand
21-Month	6-MM	51.3	35.6	9.1	4	Gravel
21-Month	7-MM	40.9	46.4	5.6	7.1	Sand with gravel
21-Month	8-MM	54.4	38.9	2.5	4.2	Gravel
21-Month	9-MM	30.9	49	14.9	5.2	Sand with gravel
21-Month	10-MM	42.7	52.2	2.8	2.3	Sand
33-Month	1-MM	48.2	43.1	8.7		Gravel with sand
33-Month	2-MM	33.4	60.1	6.5		Sand
33-Month	3-MM	57.6	36.2	6.2		Gravel
33-Month	4-MM	11.9	72.5	15.6		Sand
33-Month	5-MM	23.9	58.4	17.7		Sand
33-Month	6-MM	56.2	35.9	7.9		Gravel
33-Month	7-MM	28.2	44.1	27.7		Sand with gravel and silt
33-Month	8-MM	34.5	55.7	9.8		Sand
33-Month	9-MM	25.1	60	14.9		Sand
33-Month	10-MM	6.8	85.5	7.7		Sand

Table 5.a. Total Organic Carbon and Black Carbon Content
SPAWAR Systems Center Pacific
San Diego, California

Event	Interval Depth Below Sediment-Water Interface (cm)	Station	TOC (%)	BC (%)
Baseline	0-5	1-MM	5.8%	3.84%
Baseline	5-10	1-MM	3.2%	2.00%
Baseline	10-15	1-MM	2.3%	0.87%
Baseline	0-5	2-MM	1.6%	0.14%
Baseline	5-10	2-MM	2.0%	0.20%
Baseline	10-15	2-MM	1.0%	< 0.1 %
Baseline	0-5	3-MM	2.3%	0.47%
Baseline	5-10	3-MM	1.1%	0.21%
Baseline	10-15	3-MM	0.9%	0.10%
Baseline	0-5	3-MM-DUP	1.9%	0.42%
Baseline	5-10	3-MM-DUP	2.4%	0.48%
Baseline	10-15	3-MM-DUP	1.0%	0.30%
Baseline	0-5	4-MM	5.8%	4.26%
Baseline	0-5	5-MM	1.2%	0.10%
Baseline	5-10	5-MM	0.9%	< 0.1 %
Baseline	10-15	5-MM	0.8%	< 0.1 %
Baseline	0-5	6-MM	2.9%	0.17%
Baseline	5-10	6-MM	2.1%	0.16%
Baseline	10-15	6-MM	1.6%	0.17%
Baseline	0-5	7-MM	2.6%	0.26%
Baseline	5-10	7-MM	2.1%	0.15%
Baseline	10-15	7-MM	3.3%	0.25%
Baseline	0-5	8-MM	3.4%	2.89%
Baseline	5-10	8-MM	3.6%	0.87%
Baseline	10-15	8-MM	3.3%	0.50%
Baseline	0-5	9-MM	6.6%	4.87%
Baseline	5-10	9-MM	5.6%	3.57%
Baseline	10-15	9-MM	4.9%	2.60%
Baseline	0-5	10-MM	8.1%	7.63%
Baseline	5-10	10-MM	6.1%	4.61%
Baseline	10-15	10-MM	3.9%	2.89%

Table 5.a. Total Organic Carbon and Black Carbon Content
SPAWAR Systems Center Pacific
San Diego, California

Event	Interval Depth Below Sediment-Water Interface (cm)	Station	TOC (%)	BC (%)
0.5-Month	0-5	1-MM	1.3%	0.15%
0.5-Month	5-10	1-MM	1.0%	< 0.1 %
0.5-Month	10-15	1-MM	0.8%	< 0.1 %
0.5-Month	0-5	2-MM	10.0%	4.95%
0.5-Month	5-10	2-MM	2.6%	0.69%
0.5-Month	10-15	2-MM	0.4%	< 0.1 %
0.5-Month	0-5	3-MM	6.1%	1.05%
0.5-Month	5-10	3-MM	1.8%	0.16%
0.5-Month	10-15	3-MM	1.5%	< 0.1 %
0.5-Month	0-5	4-MM	9.0%	3.71%
0.5-Month	5-10	4-MM	3.7%	1.17%
0.5-Month	10-15	4-MM	3.1%	0.85%
0.5-Month	0-5	5-MM	8.9%	3.22%
0.5-Month	5-10	5-MM	1.1%	< 0.1 %
0.5-Month	10-15	5-MM	0.9%	< 0.1 %
0.5-Month	0-5	6-MM	10.3%	5.16%
0.5-Month	5-10	6-MM	3.3%	0.29%
0.5-Month	0-5	7-MM	11.7%	6.90%
0.5-Month	5-10	7-MM	5.7%	1.41%
0.5-Month	0-5	8-MM	11.1%	4.37%
0.5-Month	5-10	8-MM	2.2%	0.36%
0.5-Month	10-15	8-MM	3.7%	0.41%
0.5-Month	0-5	9-MM	5.6%	1.26%
0.5-Month	5-10	9-MM	4.1%	1.75%
0.5-Month	0-5	9-MM-DUP	4.8%	1.52%
0.5-Month	5-10	9-MM-DUP	3.6%	1.29%
0.5-Month	10-15	9-MM-DUP	4.2%	1.82%
0.5-Month	0-5	10-MM	8.0%	2.32%
0.5-Month	5-10	10-MM	1.9%	0.39%
0.5-Month	10-15	10-MM	1.0%	0.26%

Table 5.a. Total Organic Carbon and Black Carbon Content
SPAWAR Systems Center Pacific
San Diego, California

Event	Interval Depth Below Sediment-Water Interface (cm)	Station	TOC (%)	BC (%)
3-Month	0-5	1-MM	2.4%	0.36%
3-Month	5-10	1-MM	1.8%	0.15%
3-Month	0-5	2-MM	4.0%	3.00%
3-Month	5-10	2-MM	0.5%	< 0.1 %
3-Month	10-15	2-MM	0.1%	< 0.1 %
3-Month	0-5	3-MM	0.8%	0.72%
3-Month	5-10	3-MM	1.5%	0.52%
3-Month	0-5	4-MM	2.7%	2.20%
3-Month	0-5	5-MM	9.6%	4.30%
3-Month	5-10	5-MM	1.4%	0.26%
3-Month	0-5	6-MM	7.8%	4.40%
3-Month	5-10	6-MM	1.9%	0.32%
3-Month	0-5	7-MM	7.7%	3.90%
3-Month	5-10	7-MM	1.4%	3.20%
3-Month	0-5	8-MM	9.8%	4.30%
3-Month	5-10	8-MM	0.6%	2.30%
3-Month	10-15	8-MM	0.2%	2.10%
3-Month	0-5	9-MM	13.0%	6.40%
3-Month	5-10	9-MM	0.8%	1.10%
3-Month	10-15	9-MM	0.3%	0.13%
3-Month	0-5	10-MM	0.5%	2.60%
3-Month	5-10	10-MM	0.3%	1.10%
3-Month	10-15	10-MM	0.7%	< 0.1 %

Table 5.a. Total Organic Carbon and Black Carbon Content
SPAWAR Systems Center Pacific
San Diego, California

Event	Interval Depth Below Sediment-Water Interface (cm)	Station	TOC (%)	BC (%)
10-Month	0-5	1-MM	7.7%	4.27%
10-Month	5-10	1-MM	8.4%	6.78%
10-Month	10-15	1-MM	2.9%	2.27%
10-Month	0-5	2-MM	1.8%	0.43%
10-Month	5-10	2-MM	0.6%	< 0.1 %
10-Month	10-15	2-MM	1.2%	< 0.1 %
10-Month	0-5	3-MM	8.7%	3.07%
10-Month	5-10	3-MM	4.2%	1.02%
10-Month	10-15	3-MM	5.9%	3.32%
10-Month	0-5	4-MM	10.8%	7.58%
10-Month	5-10	4-MM	10.7%	9.69%
10-Month	10-15	4-MM	9.0%	9.63%
10-Month	0-5	5-MM	9.9%	1.30%
10-Month	5-10	5-MM	4.1%	2.82%
10-Month	10-15	5-MM	1.7%	0.27%
10-Month	0-5	6-MM	11.1%	1.60%
10-Month	5-10	6-MM	8.2%	1.51%
10-Month	10-15	6-MM	5.8%	1.82%
10-Month	0-5	7-MM-DUP	12.1%	3.25%
10-Month	5-10	7-MM-DUP	14.1%	2.91%
10-Month	10-15	7-MM-DUP	6.7%	2.50%
10-Month	0-5	7-MM	11.2%	6.05%
10-Month	5-10	7-MM	10.3%	4.93%
10-Month	10-15	7-MM	10.0%	3.23%
10-Month	0-5	8-MM	12.8%	7.04%
10-Month	5-10	8-MM	11.6%	3.77%
10-Month	10-15	8-MM	3.0%	2.79%
10-Month	0-5	9-MM	13.3%	3.18%
10-Month	5-10	9-MM	8.2%	6.75%
10-Month	10-15	9-MM	7.3%	5.85%
10-Month	0-5	10-MM	6.0%	4.09%
10-Month	5-10	10-MM	3.4%	1.94%
10-Month	10-15	10-MM	3.3%	2.61%

Table 5.a. Total Organic Carbon and Black Carbon Content
SPAWAR Systems Center Pacific
San Diego, California

Event	Interval Depth Below Sediment-Water Interface (cm)	Station	TOC (%)	BC (%)
21-Month	0-5	1-MM	12.0%	2.30%
21-Month	5-10	1-MM	11.0%	4.40%
21-Month	10-15	1-MM	9.9%	1.30%
21-Month	0-5	2-MM	3.1%	0.27%
21-Month	5-10	2-MM	3.1%	0.17%
21-Month	10-15	2-MM	2.7%	0.28%
21-Month	0-5	3-MM	3.0%	3.60%
21-Month	5-10	3-MM	1.2%	1.10%
21-Month	10-15	3-MM	2.1%	0.11%
21-Month	0-5	4-MM	3.6%	2.60%
21-Month	5-10	4-MM	5.8%	3.00%
21-Month	10-15	4-MM	7.0%	4.20%
21-Month	0-5	5-MM	22.0%	5.30%
21-Month	5-10	5-MM	0.7%	0.60%
21-Month	10-15	5-MM	0.3%	0.14%
21-Month	0-5	6-MM	3.2%	1.30%
21-Month	5-10	6-MM	3.7%	0.48%
21-Month	10-15	6-MM	0.3%	< 0.1 %
21-Month	0-5	7-MM	1.6%	1.50%
21-Month	5-10	7-MM	5.3%	3.70%
21-Month	10-15	7-MM	4.3%	3.50%
21-Month	0-5	7-MM-DUP	6.1%	1.70%
21-Month	5-10	7-MM-DUP	3.1%	1.70%
21-Month	10-15	7-MM-DUP	3.3%	2.20%
21-Month	0-5	8-MM	4.9%	3.70%
21-Month	5-10	8-MM	3.5%	3.40%
21-Month	10-15	8-MM	4.4%	3.00%
21-Month	0-5	9-MM	12.0%	3.60%
21-Month	5-10	9-MM	5.7%	1.80%
21-Month	10-15	9-MM	6.8%	3.10%
21-Month	0-5	10-MM	3.0%	2.80%
21-Month	5-10	10-MM	2.0%	2.30%
21-Month	10-15	10-MM	2.7%	1.80%

Table 5.a. Total Organic Carbon and Black Carbon Content
SPAWAR Systems Center Pacific
San Diego, California

Event	Interval Depth Below Sediment-Water Interface (cm)	Station	TOC (%)	BC (%)
33-Month	0-5	1-MM	2.0%	0.30%
33-Month	5-10	1-MM	2.0%	0.28%
33-Month	10-15	1-MM	1.1%	0.14%
33-Month	0-5	2-MM	4.7%	0.55%
33-Month	5-10	2-MM	1.3%	0.14%
33-Month	10-15	2-MM	0.2%	0.10%
33-Month	0-5	3-MM	2.2%	0.35%
33-Month	5-10	3-MM	2.8%	0.30%
33-Month	10-15	3-MM	2.6%	0.28%
33-Month	0-5	4-MM	6.8%	1.33%
33-Month	5-10	4-MM	4.7%	0.95%
33-Month	10-15	4-MM	3.1%	0.84%
33-Month	0-5	5-MM	7.1%	1.01%
33-Month	5-10	5-MM	2.1%	0.34%
33-Month	10-15	5-MM	1.5%	0.15%
33-Month	0-5	6-MM	3.8%	0.43%
33-Month	5-10	6-MM	4.2%	0.55%
33-Month	10-15	6-MM	9.5%	2.06%
33-Month	0-5	7-MM	5.8%	1.38%
33-Month	5-10	7-MM	9.9%	3.07%
33-Month	10-15	7-MM	14.3%	2.49%
33-Month	0-5	7-MM-DUP	9.5%	1.02%
33-Month	5-10	7-MM-DUP	4.5%	0.43%
33-Month	10-15	7-MM-DUP	2.8%	0.21%
33-Month	0-5	8-MM	8.2%	1.86%
33-Month	5-10	8-MM	9.7%	1.65%
33-Month	10-15	8-MM	6.7%	0.58%
33-Month	0-5	9-MM	1.2%	2.02%
33-Month	5-10	9-MM	3.3%	0.46%
33-Month	10-15	9-MM	3.4%	0.93%
33-Month	0-5	10-MM	2.5%	0.67%
33-Month	5-10	10-MM	3.1%	0.90%
33-Month	10-15	10-MM	1.5%	0.32%

1.) Intervals not listed did not have results due to sample loss in shipment.

Table 5.b. Total Organic Carbon and Black Carbon Content in 0-10 cm Below Sediment-Water Interface
SPAWAR Systems Center Pacific
San Diego, California

Event	TOC Content (%)	BC Content (%)	TOC Content Percent Change from Baseline	BC Content Percent Change from Baseline
Baseline	3.6%	2.0%	--	--
0.5-Month	5.5%	2.0%	50%	-3%
3-Month	3.6%	2.2%	-2%	7%
10-Month	8.1%	3.9%	124%	91%
21-Month	5.5%	2.4%	52%	18%
33-Month	4.4%	0.9%	20%	-55%

APPENDIX H RESULTS AND CALCULATIONS FOR BENTHIC COMMUNITY CENSUS

Table 1. Benthic Community Census Count by Species, Total Abundance, and Species Richness - Baseline Characterization
SPAWAR Systems Center Pacific
San Diego, California

Class (unless otherwise specified)	Order (unless otherwise specified)	Family	Scientific Name	Number of Individuals per Composite Sample														Taxa Abundance [8]	Taxa Rank [9]
				B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC		
Gastropoda	Neotaenioglossa	Rissoidae	*Alvania compacta*	3		4	11		1		2	28						7%	5
Gastropoda	Neogastropoda	Conidae	*Kurtzia arteaga*				1											0.15%	35
Gastropoda	Neotaenioglossa	Littorinidae	*Littorina* sp.										1					0.15%	35
Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*	1		1						2						0.6%	18
Gastropoda	Heterostropha	Pyramidellidae	*Odostomia* sp.				1					1						0.3%	28
Bivalvia	--	--	--						1			5						0.9%	16
Bivalvia	Myoida	Hiatellidae	*Hiatella arctica*								1							0.15%	35
Bivalvia	Veneroida	Lucinidae	--				1					1						0.3%	28
Bivalvia	Veneroida	Tellinidae	*Macoma balthica*											1			1	0.3%	28
Bivalvia	Veneroida	Tellinidae	*Macoma* sp.				2	1										0.5%	19
Bivalvia	Veneroida	Mactridae	*Mactromeris polynyma*									1						0.2%	35
Bivalvia	Mytiloida	Mytilidae	--			1		1			2	2				1		1.1%	14
Bivalvia	Veneroida	Veneridae	*Nutricola lordi*	1			1											0.3%	28
Bivalvia	Veneroida	Veneridae	*Protothaca staminea*				1					2						0.5%	19
Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	7		5	6	4			1	18	8	2		2	5	9%	4
Crustacea	Amphipoda	--	--									1						0.2%	35
Crustacea	Sessilia	Balanidae	--							6		27						5%	8
Crustacea	Balanomorpha (Suborder)	--	--			1		1				1						0.5%	19
Crustacea	Sessilia	Balanidae	*Balanus crenatus*						1				1			3		0.8%	17
Crustacea	Sessilia	Balanidae	*Balanus* sp.				1											0.15%	35
Crustacea	Decapoda	Cancridae	--		1													0.15%	35
Crustacea	Decapoda	Crangonidae	--							1								0.15%	35
Crustacea	Decapoda	Paguridae	--										1					0.15%	35
Crustacea	Amphipoda	Phoxocephalidae	--										1					0.15%	35
Crustacea	Decapoda	Pinnotheridae	*Pinnixa* sp.	4	1			10	4		1		2					3%	9
Oligochaeta (Subclass)	--	--	--	2			51				3	4	2					9%	3
Polychaeta	Canalipalpata	Cirratulidae	*Aphelochaeta* sp.		1		4						2					1.1%	14
Polychaeta	--	Opheliidae	*Armandia brevis*	6	13	5	23	11	2	1	4	9	45	2	2	1	1	19%	1
Polychaeta	Canalipalpata	Ampharetidae	*Asabellides lineata*										1					0.15%	35
Polychaeta	--	Capitellidae	*Capitella capitata*	6	6	4		13	7	15	13			16	6	4		14%	2
Polychaeta	Canalipalpata	Cirratulidae	*Caulleriella pacifica*					1				1	1					0.5%	19
Polychaeta	Canalipalpata	Cirratulidae	--					1		1		1						0.5%	19
Polychaeta	Aciculata	Syllidae	*Dioplosyllis* sp.		1						1							0.3%	28
Polychaeta	Aciculata	Dorvilleidae	--										1					0.15%	35
Polychaeta	Aciculata	Phyllodocidae	*Eteone* sp.		1						1		1					0.5%	19
Polychaeta	Phyllodocida	Polynoidae	*Gaudichadius iphionelloides*	1														0.15%	35
Polychaeta	Aciculata	Glyceridae	*Glycera americana*					1										0.15%	35
Polychaeta	Aciculata	Goniadidae	*Glycinde picta*										2					0.3%	28
Polychaeta	Aciculata	Polynoidae	*Harmothoe imbricata*			1												0.15%	35
Polychaeta	Aciculata	Hesionidae	--		1													0.15%	35

Table 1. Benthic Community Census Count by Species, Total Abundance, and Species Richness - Baseline Characterization
SPAWAR Systems Center Pacific
San Diego, California

Class (unless otherwise specified)	Order (unless otherwise specified)	Family	Scientific Name	Number of Individuals per Composite Sample														Taxa Abundance [8]	Taxa Rank [9]
				B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC		
Polychaeta	Aciculata	Hesionidae	*Kefersteinia cirrata*			1	9			1	4	11	13					6%	6
Polychaeta	Aciculata	Hesionidae	*Microphthalmus* sp.		1	1		1										0.5%	19
Polychaeta	Aciculata	Nephtyidae	*Nephtys* sp.			1												0.15%	35
Polychaeta	--	Capitellidae	*Notomastus tenuis*										1					0.15%	35
Polychaeta	Aciculata	Chrysopetalidae	*Paleanotus bellis*	1			1				2	3	1					1.2%	13
Polychaeta	Canalipalpata	Pectinariidae	*Pectinaria californiensis*				1					1						0.3%	28
Polychaeta	Aciculata	Hesionidae	*Podarke pugettensis*	2	1							4	2		1			1.5%	11
Polychaeta	Aciculata	Hesionidae	*Podarkeopsis glabra*			1		1	1									0.5%	19
Polychaeta	Aciculata	Polynoidae	--										1					0.15%	35
Polychaeta	Canalipalpata	Spionidae	*Prionospio jubata*				10					4	6				1	3%	10
Polychaeta	Canalipalpata	Spionidae	*Prionospio lighti*	1	4		2						2					1.4%	12
Polychaeta	Aciculata	Dorvilleidae	*Schistomeringos annulata*	5					3		10		8	8	1	1	2	6%	7
Nemertea (Phylum)	--	--	--										1					0.15%	35
Tunicata (Subphylum)	--	--	--		1			1			1							0.5%	19
			Number of Individuals [2]	**40**	**32**	**26**	**126**	**47**	**20**	**25**	**46**	**127**	**104**	**29**	**10**	**12**	**10**		
			Total Abundance (number of individuals per m^2) [3]	**4,421**	**3,537**	**2,874**	**13,926**	**5,195**	**2,210**	**2,763**	**5,084**	**14,037**	**11,495**	**3,205**	**1,105**	**1,326**	**1,105**		
			Species Richness (number of taxa) [4]	**13**	**12**	**12**	**17**	**13**	**8**	**6**	**14**	**21**	**23**	**5**	**4**	**6**	**5**		
Total abundance of the 5 most abundant taxa [5]			***Armandia brevis***	**663**	**1,437**	**553**	**2,542**	**1,216**	**221**	**111**	**442**	**995**	**4,974**	**221**	**221**	**111**	**111**		
			Capitella capitata	**663**	**663**	**442**		**1,437**	**774**	**1,658**	**1,437**			**1,768**	**663**	**442**			
			Oligochaeta (Subclass)	**221**			**5,637**				**332**	**442**	**221**						
			Rochefortia tumida	**774**		**553**	**663**	**442**			**111**	**1,989**	**884**	**221**		**221**	**553**		
			Alvania compacta	**332**		**442**	**1216**		**111**		**221**	**3095**							
			Total Abundance [6]	**2,321**	**2,100**	**1,547**	**8,842**	**3,095**	**995**	**1,768**	**2,321**	**3,426**	**6,079**	**2,210**	**884**	**774**	**663**		
			Percentage of Total Abundance [7]	**53%**	**59%**	**54%**	**63%**	**60%**	**45%**	**64%**	**46%**	**24%**	**53%**	**69%**	**80%**	**58%**	**60%**		

Notes:
1 Samples were collected by ENVIRON International Corporations and benthic macroinvertebrate were identified to the lowest taxonomic level by EcoAnalysts, Inc.
2 Number of Individuals is the total number of identifiable benthic invertebrate collected in each composite sample.
3 Total Abundance is the
4 Species Richness is the number of different taxon collected in each composite sample.
5 The five most abundant taxa were determined overall for the sampling event. Total abundance for these taxa was calculated as the number of individuals divided by the sample area (US EPA 1987).
6 Total abundance of the 5 most abundant taxa is the sum of the total abundance for the five most abundant taxa in this sampling event.
7 Percentage of Total Abundance is the Total abundance of the 5 most abundant taxa divided by the total abundance overall for the sample.
8 Taxa Abundance is the sum of the number of individuals for each taxa divided by the total number of individuals for all samples.
9 Taxa Rank is the rank of the taxa abundance for all samples.

Table 2. Shannon–Weiner Diversity (H') and Pielou’s Evenness (J') - Baseline Characterization
SPAWAR Systems Center Pacific
San Diego, California

Class (unless otherwise specified)	Order (unless otherwise specified)	Family	Scientific Name	p*i* × ln(p*i*) [1]													
				B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC
Gastropoda	Neotaenioglossa	Rissoidae	*Alvania compacta*	-0.19		-0.29	-0.21		-0.15		-0.14	-0.33					
Gastropoda	Neogastropoda	Conidae	*Kurtzia arteaga*				-0.04										
Gastropoda	Neotaenioglossa	Littorinidae	*Littorina* sp.										-0.045				
Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*	-0.09		-0.13						-0.07					
Gastropoda	Heterostropha	Pyramidellidae	*Odostomia* sp.				-0.04					-0.04					
Bivalvia	--	--	--						-0.15			-0.13					
Bivalvia	Myoida	Hiatellidae	*Hiatella arctica*								-0.08						
Bivalvia	Veneroida	Lucinidae	--				-0.04					-0.04					
Bivalvia	Veneroida	Tellinidae	*Macoma balthica*											-0.12			-0.23
Bivalvia	Veneroida	Tellinidae	*Macoma* sp.				-0.07	-0.08									
Bivalvia	Veneroida	Mactridae	*Mactromeris polynyma*									-0.04					
Bivalvia	Mytiloida	Mytilidae	--			-0.13		-0.08			-0.14	-0.07				-0.21	
Bivalvia	Veneroida	Veneridae	*Nutricola lordi*	-0.09			-0.04										
Bivalvia	Veneroida	Veneridae	*Protothaca staminea*				-0.04					-0.07					
Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	-0.31		-0.32	-0.14	-0.21			-0.08	-0.28	-0.20	-0.18		-0.30	-0.35
Crustacea	Amphipoda	--	--									-0.04					
Crustacea	Sessilia	Balanidae	--							-0.34		-0.33					
Crustacea	Balanomorpha (Suborder)	--	--			-0.13		-0.08				-0.04					
Crustacea	Sessilia	Balanidae	*Balanus crenatus*						-0.15				-0.045			-0.35	
Crustacea	Sessilia	Balanidae	*Balanus* sp.				-0.04										
Crustacea	Decapoda	Cancridae	--		-0.11												
Crustacea	Decapoda	Crangonidae	--							-0.13							
Crustacea	Decapoda	Paguridae	--										-0.045				
Crustacea	Amphipoda	Phoxocephalidae	--										-0.045				
Crustacea	Decapoda	Pinnotheridae	*Pinnixa* sp.	-0.23	-0.11			-0.33	-0.32		-0.08		-0.08				
Oligochaeta (Subclass)	--	--	--	-0.15			-0.37				-0.18	-0.11	-0.08				
Polychaeta	Canalipalpata	Cirratulidae	*Aphelochaeta* sp.		-0.11		-0.11						-0.08				
Polychaeta	--	Opheliidae	*Armandia brevis*	-0.28	-0.37	-0.32	-0.31	-0.34	-0.23	-0.13	-0.21	-0.19	-0.36	-0.18	-0.32	-0.21	-0.23
Polychaeta	Canalipalpata	Ampharetidae	*Asabellides lineata*										-0.045				
Polychaeta	--	Capitellidae	*Capitella capitata*	-0.28	-0.31	-0.29		-0.36	-0.37	-0.31	-0.36			-0.33	-0.31	-0.37	
Polychaeta	Canalipalpata	Cirratulidae	*Caulleriella pacifica*					-0.08				-0.04	-0.045				
Polychaeta	Canalipalpata	Cirratulidae	--					-0.08		-0.13		-0.04					
Polychaeta	Aciculata	Syllidae	*Dioplosyllis* sp.		-0.11						-0.08						
Polychaeta	Aciculata	Dorvilleidae	--										-0.045				

Table 2. Shannon–Weiner Diversity (H') and Pielou's Evenness (J') - Baseline Characterization
SPAWAR Systems Center Pacific
San Diego, California

Class (unless otherwise specified)	Order (unless otherwise specified)	Family	Scientific Name	p*i* × ln(p*i*) [1]													
				B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC
Polychaeta	Aciculata	Phyllodocidae	*Eteone* sp.		-0.11						-0.08		-0.045				
Polychaeta	Phyllodocida	Polynoidae	*Gaudichadius iphionelloides*	-0.09													
Polychaeta	Aciculata	Glyceridae	*Glycera americana*					-0.08									
Polychaeta	Aciculata	Goniadidae	*Glycinde picta*										-0.08				
Polychaeta	Aciculata	Polynoidae	*Harmothoe imbricata*			-0.13											
Polychaeta	Aciculata	Hesionidae	--		-0.11												
Polychaeta	Aciculata	Hesionidae	*Kefersteinia cirrata*			-0.13	-0.19			-0.13	-0.21	-0.21	-0.26				
Polychaeta	Aciculata	Hesionidae	*Microphthalmus* sp.		-0.11	-0.13		-0.08									
Polychaeta	Aciculata	Nephtyidae	*Nephtys* sp.			-0.13											
Polychaeta	--	Capitellidae	*Notomastus tenuis*										-0.045				
Polychaeta	Aciculata	Chrysopetalidae	*Paleanotus bellis*	-0.09			-0.04				-0.14	-0.09	-0.045				
Polychaeta	Canalipalpata	Pectinariidae	*Pectinaria californiensis*				-0.04					-0.04					
Polychaeta	Aciculata	Hesionidae	*Podarke pugettensis*	-0.15	-0.11							-0.11	-0.08		-0.23		
Polychaeta	Aciculata	Hesionidae	*Podarkeopsis glabra*			-0.13		-0.08	-0.15								
Polychaeta	Aciculata	Polynoidae	--										-0.045				
Polychaeta	Canalipalpata	Spionidae	*Prionospio jubata*				-0.20					-0.11	-0.16				-0.23
Polychaeta	Canalipalpata	Spionidae	*Prionospio lighti*	-0.09	-0.26		-0.07						-0.08				
Polychaeta	Aciculata	Dorvilleidae	*Schistomeringos annulata*	-0.26					-0.28		-0.33		-0.20	-0.36	-0.23	-0.21	-0.32
Nemertea (Phylum)	--	--	--										-0.045				
Tunicata (Subphylum)	--	--	--		-0.11			-0.08			-0.08						
			Shannon-Wiener Diversity (H') [2]	**2.32**	**1.91**	**2.21**	**1.97**	**1.97**	**1.80**	**1.16**	**2.20**	**2.38**	**2.17**	**1.17**	**1.09**	**1.63**	**1.36**
			Pielou's Evenness (J') [3]	**0.90**	**0.77**	**0.89**	**0.70**	**0.77**	**0.87**	**0.65**	**0.83**	**0.78**	**0.69**	**0.73**	**0.79**	**0.91**	**0.84**

Notes:
1 p*i* is the proportion of individuals in species *i* to the total number of individuals in each sample. ln is the natural logarithm of p*i*.
2 Shannon-Wiener Diversity (H') is calculated as the sum of p*i*×ln(p*i*) for each species in each sample (Becker et al. 2011, USEPA 1987).
3 Pielou's Evenness (J') is calculated as H' divided by the natural logarithm of the number of taxa (Becker et al. 2011, USEPA 1987).

Table 3. Swartz's Dominance Index (SDI) - Baseline Characterization

SPAWAR Systems Center Pacific

San Diego, California

Class (unless otherwise specified)	Order (unless otherwise specified)	Family	Scientific Name	*pi* [1]													
				B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC
Gastropoda	Neotaenioglossa	Rissoidae	*Alvania compacta*	8%		15%	9%		5%		4%	22%					
Gastropoda	Neogastropoda	Conidae	*Kurtzia arteaga*				0.8%										
Gastropoda	Neotaenioglossa	Littorinidae	*Littorina* sp.										1.0%				
Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*	2.5%		4%						2%					
Gastropoda	Heterostropha	Pyramidellidae	*Odostomia* sp.				0.8%					0.8%					
Bivalvia	--	--	--						5%			4%					
Bivalvia	Myoida	Hiatellidae	*Hiatella arctica*								2%						
Bivalvia	Veneroida	Lucinidae	--				0.8%					0.8%					
Bivalvia	Veneroida	Tellinidae	*Macoma balthica*											3%			10%
Bivalvia	Veneroida	Tellinidae	*Macoma* sp.				2%	2%									
Bivalvia	Veneroida	Mactridae	*Mactromeris polynyma*									0.8%					
Bivalvia	Mytiloida	Mytilidae	--			4%		2%			4%	2%				8%	
Bivalvia	Veneroida	Veneridae	*Nutricola lordi*	2.5%			0.8%										
Bivalvia	Veneroida	Veneridae	*Protothaca staminea*				0.8%					2%					
Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	18%		19%	5%	9%			2%	14%	8%	7%		17%	50%
Crustacea	Amphipoda	--	--									0.8%					
Crustacea	Sessilia	Balanidae	--							24%		21%					
Crustacea	Balanomorpha (Suborder)	--	--			4%		2%				0.8%					
Crustacea	Sessilia	Balanidae	*Balanus crenatus*						5%				1.0%			25%	
Crustacea	Sessilia	Balanidae	*Balanus* sp.				0.8%										
Crustacea	Decapoda	Cancridae	--		3%												
Crustacea	Decapoda	Crangonidae	--							4%							
Crustacea	Decapoda	Paguridae	--										1.0%				
Crustacea	Amphipoda	Phoxocephalidae	--										1.0%				
Crustacea	Decapoda	Pinnotheridae	*Pinnixa* sp.	10%	3%			21%	20%		2%		1.9%				
Oligochaeta (Subclass)	--	--	--	5%			40%				7%	3%	1.9%				
Polychaeta	Canalipalpata	Cirratulidae	*Aphelochaeta* sp.		3%		3%						1.9%				
Polychaeta	--	Opheliidae	*Armandia brevis*	15%	41%	19%	18%	23%	10%	4%	9%	7%	43%	7%	20%	8%	10%
Polychaeta	Canalipalpata	Ampharetidae	*Asabellides lineata*										1.0%				
Polychaeta	--	Capitellidae	*Capitella capitata*	15%	19%	15%		28%	35%	60%	28%			55%	60%	33%	
Polychaeta	Canalipalpata	Cirratulidae	*Caulleriella pacifica*					2%				0.8%	1.0%				
Polychaeta	Canalipalpata	Cirratulidae	--					2%		4%		0.8%					
Polychaeta	Aciculata	Syllidae	*Dioplosyllis* sp.		3%						2%						

Table 3. Swartz's Dominance Index (SDI) - Baseline Characterization
SPAWAR Systems Center Pacific
San Diego, California

Class (unless otherwise specified)	Order (unless otherwise specified)	Family	Scientific Name	p*i* [1]													
				B1-MM-BENTHIC	**B2-MM-BENTHIC**	**B3-MM-BENTHIC**	**B4-MM-BENTHIC**	**B5-MM-BENTHIC**	**B6-MM-BENTHIC**	**B7-MM-BENTHIC**	**B8-MM-BENTHIC**	**B9-MM-BENTHIC**	**B10-MM-BENTHIC**	**B1-RBS-BENTHIC**	**B2-RBS-BENTHIC**	**B3-RBS-BENTHIC**	**B4-RBS-BENTHIC**
Polychaeta	Aciculata	Dorvilleidae	--										1.0%				
Polychaeta	Aciculata	Phyllodocidae	*Eteone* sp.		3%						2%		1.0%				
Polychaeta	Phyllodocida	Polynoidae	*Gaudichadius iphionelloides*	2.5%													
Polychaeta	Aciculata	Glyceridae	*Glycera americana*					2%									
Polychaeta	Aciculata	Goniadidae	*Glycinde picta*										1.9%				
Polychaeta	Aciculata	Polynoidae	*Harmothoe imbricata*			4%											
Polychaeta	Aciculata	Hesionidae	--		3%												
Polychaeta	Aciculata	Hesionidae	*Kefersteinia cirrata*			4%	7%			4%	9%	9%	13%				
Polychaeta	Aciculata	Hesionidae	*Microphthalmus* sp.		3%	4%		2%									
Polychaeta	Aciculata	Nephtyidae	*Nephtys* sp.			4%											
Polychaeta	--	Capitellidae	*Notomastus tenuis*										1.0%				
Polychaeta	Aciculata	Chrysopetalidae	*Paleanotus bellis*	2.5%			0.8%				4%	2%	1.0%				
Polychaeta	Canalipalpata	Pectinariidae	*Pectinaria californiensis*				0.8%					0.8%					
Polychaeta	Aciculata	Hesionidae	*Podarke pugettensis*	5%	3%							3%	1.9%		10%		
Polychaeta	Aciculata	Hesionidae	*Podarkeopsis glabra*			4%		2%	5%								
Polychaeta	Aciculata	Polynoidae	--										1.0%				
Polychaeta	Canalipalpata	Spionidae	*Prionospio jubata*				8%					3%	6%				10%
Polychaeta	Canalipalpata	Spionidae	*Prionospio lighti*	2.5%	13%		2%						1.9%				
Polychaeta	Aciculata	Dorvilleidae	*Schistomeringos annulata*	13%					15%		22%		8%	28%	10%	8%	20%
Nemertea (Phylum)	--	--	--										1.0%				
Tunicata (Subphylum)	--	--	--		3%			2%			2%						
Swartz's Dominance Index (SDI) [2]				**6**	**4**	**9**	**5**	**4**	**4**	**2**	**6**	**6**	**5**	**2**	**2**	**3**	**3**

Notes:
1 p*i* is the proportion of individuals in species *i* to the total number of individuals in each sample.
2 Swartz's Dominance Index (SDI) is the minimum number of species required to account for 75 percent of individuals in a sample (Becker et al. 2011, USEPA 1987).

Table 4. Summary of Benthic Community Census Metrics - Baseline Characterization
SPAWAR Systems Center Pacific
San Diego, California

Station	Location in Relation to the Future Reactive Cap Area	Total Abundance (number of individuals per m^2)	Species Richness	Shannon-Wiener Diversity	Pielou's Evenness	Swartz's Dominance Index	Percentage of Total Abundance Comprised of 5 Most Abundant Taxa
B1-MM	Within	4,421	13	2.32	0.90	6	53%
B2-MM	Within	3,537	12	1.91	0.77	4	59%
B3-MM	Within	2,874	12	2.21	0.89	9	54%
B4-MM	Within	13,926	17	1.97	0.70	5	63%
B5-MM	Within	5,195	13	1.97	0.77	4	60%
B6-MM	Within	2,210	8	1.80	0.87	4	45%
B7-MM	Within	2,763	6	1.16	0.65	2	64%
B8-MM	Within	5,084	14	2.20	0.83	6	46%
B9-MM	Within	14,037	21	2.38	0.78	6	24%
B10-MM	Within	11,495	23	2.17	0.69	5	53%
B1-RBS	Outside	3,205	5	1.17	0.73	2	69%
B2-RBS	Outside	1,105	4	1.09	0.79	2	80%
B3-RBS	Outside	1,326	6	1.63	0.91	3	58%
B4-RBS	Outside	1,105	5	1.36	0.84	3	60%

Table 1. Benthic Community Census Count by Species, Total Abundance, and Species Richness - 10-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

					Number of Individuals per Composite Sample															
Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC	Taxa Abundance [8]	Taxa Rank [9]
Annelida	Polychaeta	Terebellida	Ampharetidae	*Ampharete finmarchica*														1	0.1%	39
Annelida	Polychaeta	Terebellida	Cirratulidae	*Aphelochaeta multifilis*				1	54		8	13		1					9.3%	2
Annelida	Polychaeta	Sabellida	Serpulidae	*Apomatus geniculata*						1									0.1%	39
Annelida	Polychaeta	-	Opheliidae	*Armandia brevis*	2		2	3			1		1	4	3			24	4.8%	5
Annelida	Polychaeta	Phyllodocida	Nephtyidae	*Bipalponephtys cornuta*		5			5		5				3		2	1	2.5%	9
Annelida	Polychaeta	-	Capitellidae	*Capitella capitata*			1				1					2			0.5%	18
Annelida	Polychaeta	Terebellida	Cirratulidae	-					31	1	16	9		1					7.0%	3
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eteone longa*					2			1							0.4%	25
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Eunoe sp.*				1											0.1%	39
Annelida	Polychaeta	Phyllodocida	Glyceridae	*Glycera americana*										1					0.1%	39
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Glycinde picta*			1	1				1							0.4%	25
Annelida	Polychaeta	Phyllodocida	Polynoidae	Harmothoinae (subfamily)		1													0.1%	39
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Kefersteinia cirrata*	3		3	11				3	7	8	2	1		11	5.9%	4
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Lumbrineris sp.*					1										0.1%	39
Annelida	Polychaeta	Phyllodocida	Nephtyidae	-		1													0.1%	39
Annelida	Oligochaeta (sublcass)	-	-	-				13				5	4	2					2.9%	8
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Oxydromus pugettensis*											1	1			0.2%	31
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio pinnata*		2			1		1								0.5%	18
Annelida	Polychaeta	Phyllodocida	Pholoidae	*Pholoe minuta*				2								1			0.4%	25
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	-														1	0.1%	39
Annelida	Polychaeta	Phyllodocida	Nereididae	*Platynereis bicanaliculata*				3											0.4%	25
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Podarkeopsis brevipalpa*										1	1				0.2%	31
Annelida	Polychaeta	Spionida	Spionidae	*Polydora cornuta*				1		1					1	3			0.7%	16
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio lighti*					2									1	0.4%	25
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio sp.*					1										0.1%	39
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio steenstrupi*					1			1		7					1.1%	13
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Protodorvillea gracilis*				1											0.1%	39
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Schistomeringos annulata*		1					1				1	4			0.8%	15
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Scoletoma sp.*					1										0.1%	39
Annelida	Polychaeta	Canalipalpata	Spionidae	-													1		0.121%	39
Crustacea (subphylum)	Maxillopoda	Sessilia	Balanidae	*Balanus crenatus*			15		4	257	7		29		1	4	2	1	39%	1
Crustacea (subphylum)	Malacostraca	Decapoda	Cancridae	-								1		1					0.24%	31
Crustacea (subphylum)	Malacostraca	Amphipoda	Corophiidea (suborder)	-									1						0.121%	39
Crustacea (subphylum)	Eumalacostraca	Decapoda	Crangonidae	*Crangon sp.*	1		1			1						1			0.48%	18
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	-			3				1								0.48%	18
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa eburna*								1							0.121%	39
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*			1							1	3				0.60%	17
Crustacea (subphylum)	Maxillopoda	Sessilia	-	-				5				3							0.97%	14
Crustacea (subphylum)	Malacostraca	Decapoda	Atelecyclidae	*Telmessus cheiragonus*			1												0.121%	39
Cnidaria	Anthozoa	Actiniaria	Metridiidae	*Metridium senile*						1									0.121%	39
Echinodermata	Ophiuroidea	-	-	-			1												0.121%	39
Mollusca	Gastropoda	Neogastropoda	Columbellidae	*Alia gausapata*												1			0.121%	39
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania compacta*			10	9				1							2.4%	10
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania sp.*	4	1			6	7				1	4			6	3.5%	7
Mollusca	Bivalvia	Lucinoida	Thyasiridae	*Axinopsida serricata*														1	0.121%	39
Mollusca	Bivalvia	-	-	-			2	2		2		1	3						1.21%	12
Mollusca	Bivalvia	Veneroida	Cardiidae	*Clinocardium nuttallii*					2										0.24%	31

Table 1. Benthic Community Census Count by Species, Total Abundance, and Species Richness - 10-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	Number of Individuals per Composite Sample														Taxa Abundance [8]	Taxa Rank [9]
					B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC		
Mollusca	Gastropoda	Littorinimorpha	Calyptraeidae	*Crepidula sp.*				1											0.121%	39
Mollusca	Gastropoda	-	Eubranchidae	-				1											0.121%	39
Mollusca	Gastropoda	-	-	-													1		0.121%	39
Mollusca	Bivalvia	Euheterodonta	Hiatellidae	*Hiatella arctica*								1							0.121%	39
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma carlottensis*								1							0.121%	39
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma expansa*			1					3							0.48%	18
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*	1		1		1								1		0.48%	18
Mollusca	Bivalvia	Mytiloida	Mytilidae	-		1	2	5		3				2				3	1.93%	11
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*	2														0.24%	31
Mollusca	Gastropoda	Nudibranchia (clade)	-	-			2			2									0.48%	18
Mollusca	Gastropoda	Heterobranchia (clade)	Pyramidellidae	*Odostomia sp.*			1					1							0.24%	31
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	5			11	3	1		10	2	2	1		1	3	4.7%	6
Mollusca	Bivalvia	Veneroida	Tellinidae	-										2					0.24%	31
Mollusca	Bivalvia	Veneroida	Veneridae	-	1			1											0.24%	31
Nemertea	Enopla	Monostilifera	Amphiporidae	*Amphiporus cruentatus*	1														0.121%	39
Nemertea	Anopla	Heteronemertea	Lineidae	-									1						0.121%	39
Nemertea	-	-	-	-			1												0.121%	39
Nemertea	Anopla	Palaeonemertea	-	-				2	1										0.36%	25
Number of Individuals [2]					**20**	**12**	**49**	**74**	**116**	**277**	**41**	**56**	**48**	**34**	**21**	**18**	**8**	**53**		
Total Abundance (number of individuals per m^2) [3]					**2,222**	**1,333**	**5,444**	**8,222**	**12,889**	**30,778**	**4,556**	**6,222**	**5,333**	**3,778**	**2,333**	**2,000**	**889**	**5,889**		
Species Richness (number of taxa) [4]					**9**	**7**	**18**	**19**	**16**	**11**	**9**	**17**	**8**	**14**	**11**	**9**	**6**	**11**		
Total abundance of the 5 most abundant taxa [5]				***Balanus crenatus***	**0**	**0**	**1,667**	**0**	**444**	**28,556**	**778**	**0**	**3,222**	**0**	**111**	**444**	**222**	**111**		
				Aphelochaeta multifilis	**0**	**0**	**0**	**111**	**6,000**	**0**	**889**	**1,444**	**0**	**111**	**0**	**0**	**0**	**0**		
				Cirratulidae (Family)	**0**	**0**	**0**	**0**	**3,444**	**111**	**1,778**	**1,000**	**0**	**111**	**0**	**0**	**0**	**0**		
				Kefersteinia cirrata	**333**	**0**	**333**	**1,222**	**0**	**0**	**0**	**333**	**778**	**889**	**222**	**111**	**0**	**1,222**		
				Armandia brevis	**222**	**0**	**222**	**333**	**0**	**0**	**111**	**0**	**111**	**444**	**333**	**0**	**0**	**2,667**		
				Total Abundance [6]	**333**	**0**	**2,000**	**1,333**	**9,889**	**28,667**	**3,444**	**2,778**	**4,000**	**1,111**	**333**	**556**	**222**	**1,333**		
				Percentage of Total Abundance [7]	**15%**	**0%**	**37%**	**16%**	**77%**	**93%**	**76%**	**45%**	**75%**	**29%**	**14%**	**28%**	**25%**	**23%**		

Notes:
[1] Samples were collected by ENVIRON International Corporation and benthic macroinvertebrate were identified to the lowest taxonomic level by EcoAnalysts, Inc.
[2] Number of Individuals is the total number of identifiable benthic invertebrate collected in each composite sample.
[3] Total Abundance is the number of individuals divided by the sample area (US EPA 1987).
[4] Species Richness is the number of different taxon collected in each composite sample.
[5] The five most abundant taxa were determined overall for the sampling event. Total abundance for these taxa was calculated as the number of individuals divided by the sample area (US EPA 1987).
[6] Total abundance of the 5 most abundant taxa is the sum of the total abundance for the five most abundant taxa in this sampling event.
[7] Percentage of Total Abundance is the Total abundance of the 5 most abundant taxa divided by the total abundance overall for the sample.
[8] Taxa Abundance is the sum of the number of individuals for each taxa divided by the total number of individuals for all samples.
[9] Taxa Rank is the rank of the taxa abundance for all samples.

Table 2. Shannon–Weiner Diversity (H') and Pielou's Evenness (J') - 10-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	*pi* × ln(*pi*) [1]													
					B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC
Annelida	Polychaeta	Terebellida	Ampharetidae	*Ampharete finmarchica*														-0.07
Annelida	Polychaeta	Terebellida	Cirratulidae	*Aphelochaeta multifilis*				-0.06	-0.36		-0.32	-0.34		-0.10				
Annelida	Polychaeta	Sabellida	Serpulidae	*Apomatus geniculata*						-0.02								
Annelida	Polychaeta	-	Opheliidae	*Armandia brevis*	-0.23		-0.13	-0.13			-0.09		-0.08	-0.25	-0.28			-0.36
Annelida	Polychaeta	Phyllodocida	Nephtyidae	*Bipalponephtys cornuta*		-0.36			-0.14		-0.26				-0.28		-0.35	-0.07
Annelida	Polychaeta	-	Capitellidae	*Capitella capitata*			-0.08				-0.09					-0.24		
Annelida	Polychaeta	Terebellida	Cirratulidae	-					-0.35	-0.02	-0.37	-0.29		-0.10				
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eteone longa*					-0.07			-0.07						
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Eunoe sp.*				-0.06										
Annelida	Polychaeta	Phyllodocida	Glyceridae	*Glycera americana*										-0.10				
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Glycinde picta*			-0.08	-0.06				-0.07						
Annelida	Polychaeta	Phyllodocida	Polynoidae	Harmothoinae (subfamily)		-0.21												
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Kefersteinia cirrata*	-0.28		-0.17	-0.28				-0.16	-0.28	-0.34	-0.22	-0.16		-0.33
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Lumbrineris sp.*					-0.04									
Annelida	Polychaeta	Phyllodocida	Nephtyidae	-		-0.21												
Annelida	Oligochaeta (sublcass)	-	-	-				-0.31				-0.22	-0.21	-0.17				
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Oxydromus pugettensis*											-0.14	-0.16		
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio pinnata*		-0.30			-0.04		-0.09							
Annelida	Polychaeta	Phyllodocida	Pholoidae	*Pholoe minuta*				-0.10								-0.16		
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	-														-0.07
Annelida	Polychaeta	Phyllodocida	Nereididae	*Platynereis bicanaliculata*				-0.13										
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Podarkeopsis brevipalpa*										-0.10	-0.14			
Annelida	Polychaeta	Spionida	Spionidae	*Polydora cornuta*				-0.06		-0.02					-0.14	-0.30		
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio lighti*					-0.07									-0.07
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio sp.*					-0.04									
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio steenstrupi*					-0.04			-0.07		-0.33				
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Protodorvillea gracilis*				-0.06										
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Schistomeringos annulata*		-0.21					-0.09				-0.14	-0.33		
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Scoletoma sp.*					-0.04									
Annelida	Polychaeta	Canalipalpata	Spionidae	-													-0.26	
Crustacea (subphylum)	Maxillopoda	Sessilia	Balanidae	*Balanus crenatus*			-0.36		-0.12	-0.07	-0.30		-0.30		-0.14	-0.33	-0.35	-0.07
Crustacea (subphylum)	Malacostraca	Decapoda	Cancridae	-								-0.07		-0.10				
Crustacea (subphylum)	Malacostraca	Amphipoda	Corophiidea (suborder)	-									-0.08					
Crustacea (subphylum)	Eumalacostraca	Decapoda	Crangonidae	*Crangon sp.*	-0.15		-0.08			-0.02						-0.16		
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	-			-0.17				-0.09							
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa eburna*								-0.07						
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*			-0.08							-0.10	-0.28			
Crustacea (subphylum)	Maxillopoda	Sessilia	-	-				-0.18				-0.16						
Crustacea (subphylum)	Malacostraca	Decapoda	Atelecyclidae	*Telmessus cheiragonus*			-0.08											
Cnidaria	Anthozoa	Actiniaria	Metridiidae	*Metridium senile*						-0.02								
Echinodermata	Ophiuroidea	-	-	-			-0.08											

Table 2. Shannon–Weiner Diversity (H') and Pielou’s Evenness (J') - 10-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	p*i* × ln(p*i*) [1]													
					B1-MM-BENTHIC	**B2-MM-BENTHIC**	**B3-MM-BENTHIC**	**B4-MM-BENTHIC**	**B5-MM-BENTHIC**	**B6-MM-BENTHIC**	**B7-MM-BENTHIC**	**B8-MM-BENTHIC**	**B9-MM-BENTHIC**	**B10-MM-BENTHIC**	**B1-RBS-BENTHIC**	**B2-RBS-BENTHIC**	**B3-RBS-BENTHIC**	**B4-RBS-BENTHIC**
Mollusca	Gastropoda	Neogastropoda	Columbellidae	*Alia gausapata*												-0.16		
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania compacta*			-0.32	-0.26				-0.07						
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania sp.*	-0.32	-0.21			-0.15	-0.09				-0.10	-0.32			-0.25
Mollusca	Bivalvia	Lucinoida	Thyasiridae	*Axinopsida serricata*														-0.07
Mollusca	Bivalvia	-	-	-			-0.13	-0.10		-0.04		-0.07	-0.17					
Mollusca	Bivalvia	Veneroida	Cardiidae	*Clinocardium nuttallii*					-0.07									
Mollusca	Gastropoda	Littorinimorpha	Calyptraeidae	*Crepidula sp.*				-0.06										
Mollusca	Gastropoda	-	Eubranchidae	-				-0.06										
Mollusca	Gastropoda	-	-	-													-0.26	
Mollusca	Bivalvia	Euheterodonta	Hiatellidae	*Hiatella arctica*								-0.07						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma carlottensis*								-0.07						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma expansa*			-0.08					-0.16						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*	-0.15		-0.08		-0.04								-0.26	
Mollusca	Bivalvia	Mytiloida	Mytilidae	-		-0.21	-0.13	-0.18		-0.05				-0.17				-0.16
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*	-0.23													
Mollusca	Gastropoda	Nudibranchia (clade)	-	-			-0.13			-0.04								
Mollusca	Gastropoda	Heterobranchia (clade)	Pyramidellidae	*Odostomia sp.*			-0.08					-0.07						
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	-0.35			-0.28	-0.09	-0.02		-0.31	-0.13	-0.17	-0.14		-0.26	-0.16
Mollusca	Bivalvia	Veneroida	Tellinidae	-										-0.17				
Mollusca	Bivalvia	Veneroida	Veneridae	-	-0.15			-0.06										
Nemertea	Enopla	Monostilifera	Amphiporidae	*Amphiporus cruentatus*	-0.15													
Nemertea	Anopla	Heteronemertea	Lineidae	-									-0.08					
Nemertea	-	-	-	-			-0.08											
Nemertea	Anopla	Palaeonemertea	-	-				-0.10	-0.04									
				Shannon-Weiner Diversity (H') [2]	**2.01**	**1.70**	**2.35**	**2.51**	**1.70**	**0.40**	**1.70**	**2.35**	**1.34**	**2.31**	**2.24**	**2.01**	**1.73**	**1.71**
				Pielou’s Evenness (J') [3]	**0.92**	**0.87**	**0.81**	**0.85**	**0.61**	**0.17**	**0.77**	**0.83**	**0.64**	**0.88**	**0.94**	**0.92**	**0.97**	**0.71**

Notes:
[1] p*i* is the proportion of individuals in species *i* to the total number of individuals in each sample. Ln is the natural logarithm of p*i*.
[2] Shannon-Wiener Diversity (H') is calculated as the sum of p*i*×ln(p*i*) for each species in each sample (Becker et al. 2011, USEPA 1987).
[3] Pielou’s Evenness (J') is calculated as H' divided by the natural logarithm of the number of taxa (Becker et al. 2011, USEPA 1987).

Table 3. Swartz's Dominance Index (SDI) - 10-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	p*i* [1]													
					B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC
Annelida	Polychaeta	Terebellida	Ampharetidae	*Ampharete finmarchica*														2%
Annelida	Polychaeta	Terebellida	Cirratulidae	*Aphelochaeta multifilis*				1%	47%		20%	23%		3%				
Annelida	Polychaeta	Sabellida	Serpulidae	*Apomatus geniculata*						0.4%								
Annelida	Polychaeta	-	Opheliidae	*Armandia brevis*	10%		4%	4%			2%		2%	12%	14%			45%
Annelida	Polychaeta	Phyllodocida	Nephtyidae	*Bipalponephtys cornuta*		42%			4%		12%				14%		25%	2%
Annelida	Polychaeta	-	Capitellidae	*Capitella capitata*			2%				2%					11%		
Annelida	Polychaeta	Terebellida	Cirratulidae	-					27%	0.4%	39%	16%		3%				
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eteone longa*					2%			2%						
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Eunoe sp.*				1%										
Annelida	Polychaeta	Phyllodocida	Glyceridae	*Glycera americana*										3%				
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Glycinde picta*			2%	1%				2%						
Annelida	Polychaeta	Phyllodocida	Polynoidae	Harmothoinae (subfamily)		8%												
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Kefersteinia cirrata*	15%		6%	15%				5%	15%	24%	10%	6%		21%
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Lumbrineris sp.*					0.9%									
Annelida	Polychaeta	Phyllodocida	Nephtyidae	-		8%												
Annelida	Oligochaeta (sublcass)	-	-	-				18%				9%	8%	6%				
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Oxydromus pugettensis*											5%	6%		
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio pinnata*		17%			0.9%		2%							
Annelida	Polychaeta	Phyllodocida	Pholoidae	*Pholoe minuta*				3%								6%		
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	-														2%
Annelida	Polychaeta	Phyllodocida	Nereididae	*Platynereis bicanaliculata*				4%										
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Podarkeopsis brevipalpa*										3%	5%			
Annelida	Polychaeta	Spionida	Spionidae	*Polydora cornuta*				1%		0.4%					5%	17%		
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio lighti*					2%									2%
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio sp.*					0.9%									
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio steenstrupi*					0.9%			2%		21%				
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Protodorvillea gracilis*				1%										
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Schistomeringos annulata*		8%					2%				5%	22%		
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Scoletoma sp.*					0.9%									
Annelida	Polychaeta	Canalipalpata	Spionidae	-													13%	
Crustacea (subphylum)	Maxillopoda	Sessilia	Balanidae	*Balanus crenatus*			31%		3%	93%	17%		60%		5%	22%	25%	2%
Crustacea (subphylum)	Malacostraca	Decapoda	Cancridae	-								2%		3%				
Crustacea (subphylum)	Malacostraca	Amphipoda	Corophiidea (suborder)	-									2%					
Crustacea (subphylum)	Eumalacostraca	Decapoda	Crangonidae	*Crangon sp.*	5%		2%			0.4%						6%		
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	-			6%				2%							
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa eburna*								2%						
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*			2%							3%	14%			

Table 3. Swartz's Dominance Index (SDI) - 10-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	p*i* [1]													
					B1-MM-BENTHIC	B2-MM-BENTHIC	B3-MM-BENTHIC	B4-MM-BENTHIC	B5-MM-BENTHIC	B6-MM-BENTHIC	B7-MM-BENTHIC	B8-MM-BENTHIC	B9-MM-BENTHIC	B10-MM-BENTHIC	B1-RBS-BENTHIC	B2-RBS-BENTHIC	B3-RBS-BENTHIC	B4-RBS-BENTHIC
Crustacea (subphylum)	Maxillopoda	Sessilia	-	-				7%				5%						
Crustacea (subphylum)	Malacostraca	Decapoda	Atelecyclidae	*Telmessus cheiragonus*			2%											
Cnidaria	Anthozoa	Actiniaria	Metridiidae	*Metridium senile*						0.4%								
Echinodermata	Ophiuroidea	-	-	-			2%											
Mollusca	Gastropoda	Neogastropoda	Columbellidae	*Alia gausapata*												6%		
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania compacta*			20%	12%				2%						
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania sp.*	20%	8%			5%	3%				3%	19%			11%
Mollusca	Bivalvia	Lucinoida	Thyasiridae	*Axinopsida serricata*														2%
Mollusca	Bivalvia	-	-	-			4%	3%		1%		2%	6%					
Mollusca	Bivalvia	Veneroida	Cardiidae	*Clinocardium nuttallii*					2%									
Mollusca	Gastropoda	Littorinimorpha	Calyptraeidae	*Crepidula sp.*				1%										
Mollusca	Gastropoda	-	Eubranchidae	-				1%										
Mollusca	Gastropoda	-	-	-													13%	
Mollusca	Bivalvia	Euheterodonta	Hiatellidae	*Hiatella arctica*								2%						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma carlottensis*								2%						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma expansa*			2%					5%						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*	5%		2%		0.9%								13%	
Mollusca	Bivalvia	Mytiloida	Mytilidae	-		8%	4%	7%		1%				6%				6%
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*	10%													
Mollusca	Gastropoda	Nudibranchia (clade)	-	-			4%			1%								
Mollusca	Gastropoda	Heterobranchia (clade)	Pyramidellidae	*Odostomia sp.*			2%					2%						
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	25%			15%	3%	0.4%		18%	4%	6%	5%		13%	6%
Mollusca	Bivalvia	Veneroida	Tellinidae	-										6%				
Mollusca	Bivalvia	Veneroida	Veneridae	-	5%			1%										
Nemertea	Enopla	Monostilifera	Amphiporidae	*Amphiporus cruentatus*	5%													
Nemertea	Anopla	Heteronemertea	Lineidae	-									2%					
Nemertea	-	-	-	-			2%											
Nemertea	Anopla	Palaeonemertea	-	-				3%	0.9%									
				Swartz's Dominance Index (SDI) [2]	**5**	**4**	**7**	**7**	**3**	**1**	**3**	**6**	**2**	**7**	**6**	**5**	**4**	**3**

Notes:
[1] p*i* is the proportion of individuals in species *i* to the total number of individuals in each sample.
[2] Swartz's Dominance Index (SDI) is the minimum number of species required to account for 75 percent of individuals in a sample (Becker et al. 2011, USEPA 1987).

Table 4. Summary of Benthic Community Census Metrics - 10-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Station	Located Within Cap Target Area	Total Abundance (number of individuals per m^2)	Species Richness	Shannon-Wiener Diversity	Pielou's Evenness	Swartz's Dominance Index	Percentage of Total Abundance Comprised of 5 Most Abundant Taxa
1-MM	Yes	2,222	9	2.01	0.92	5	15%
2-MM	Yes	1,333	7	1.70	0.87	4	0%
3-MM	Yes	5,444	18	2.35	0.81	7	37%
4-MM	Yes	8,222	19	2.51	0.85	7	16%
5-MM	Yes	12,889	16	1.70	0.61	3	77%
6-MM	Yes	30,778	11	0.40	0.17	1	93%
7-MM	Yes	4,556	9	1.70	0.77	3	76%
8-MM	Yes	6,222	17	2.35	0.83	6	45%
9-MM	Yes	5,333	8	1.34	0.64	2	75%
10-MM	Yes	3,778	14	2.31	0.88	7	29%
1-RBS	No	2,333	11	2.24	0.94	6	14%
2-RBS	No	2,000	9	2.01	0.92	5	28%
3-RBS	No	889	6	1.73	0.97	4	25%
4-RBS	No	5,889	11	1.71	0.71	3	23%

Table 1. Benthic Community Census Count by Species, Total Abundance, and Species Richness - 21-Month Sampling Event

SPAWAR Systems Center Pacific

San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	Number of Individuals per Composite Sample														Taxa Abundance [8]	Taxa Rank [9]
					B22-1-MM-BENTHIC	B22-2-MM-BENTHIC	B22-3-MM-BENTHIC	B22-4-MM-BENTHIC	B22-5-MM-BENTHIC	B22-6-MM-BENTHIC	B22-7-MM-BENTHIC	B22-8-MM-BENTHIC	B22-9-MM-BENTHIC	B22-10-MM-BENTHIC	B22-1-RBS-BENTHIC	B22-2-RBS-BENTHIC	B22-3-RBS-BENTHIC	B22-4-RBS-BENTHIC		
Annelida	Clitellata, Oligochaeta (sublcass)	-	-	-				1										2	0.4%	27
Annelida	Polychaeta	Terebellida	Cirratulidae	-			2												0.3%	32
Annelida	Polychaeta	Capitellida	Capitellidae	-		4		1											0.7%	19
Annelida	Polychaeta	Terebellida	Ampharetidae	*Ampharete finmarchica*					2									2	0.5%	23
Annelida	Polychaeta	Terebellida	Cirratulidae	*Aphelochaeta glandaria Complex*				3	6	8	6	16	3	9				2	7.3%	3
Annelida	Polychaeta	Opheliida	Opheliidae	*Armandia brevis*	36			125		2			2	21		2	31	47	36.4%	1
Annelida	Polychaeta	Phyllodocida	Nephtyidae	*Bipalponephtys cornuta*					2										0.3%	32
Annelida	Polychaeta	Capitellida	Capitellidae	*Capitella capitata*	5	1							1		4	2			1.8%	10
Annelida	Polychaeta	Terebellida	Cirratulidae	*Caulleriella cf. alata*				1						4					0.7%	19
Annelida	Polychaeta	Terebellida	Cirratulidae	*Chaetozone acuta*				1											0.1%	45
Annelida	Polychaeta	Terebellida	Cirratulidae	*Cirratulus spectabilis*		1					1								0.3%	32
Annelida	Polychaeta	Spionida	Spionidae	*Dipolydora socialis*	1													1	0.3%	32
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eulalia levicornuta Cmplx*	1													1	0.3%	32
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eulalia sp.*					1										0.1%	45
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eumida longicornuta*											1				0.1%	45
Annelida	Polychaeta	Terebellida	Terebellidae	*Eupolymnia heterobranchia*														1	0.1%	45
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Glycinde picta*	2		1	3	1	2			3	2					1.9%	9
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Goniada littorea*														2	0.3%	32
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Harmothoe imbricata*	1				2	1							2	2	1.1%	15
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Lepidonotus spiculus*					2										0.3%	32
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Lumbrineris latreilli*				2											0.3%	32
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Micropodarke dubia*	6			30			1		9	1		2	7	27	11.4%	2
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Mystides borealis*										1					0.1%	45
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Oxydromus pugettensis*			2	1	3			3		4	3	1	1	1	2.6%	7
Annelida	Polychaeta	Phyllodocida	Chrysopetalidae	*Paleanotus bellis*				1	1				1					3	0.8%	17
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio alata*						1									0.1%	45
Annelida	Polychaeta	Phyllodocida	Pholoidae	*Pholoe minuta*	1			1						1					0.4%	27
Annelida	Polychaeta	Phyllodocida	Sigalionidae	*Pholoides asperus*														1	0.1%	45
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Phyllodoce groenlandica*				1											0.1%	45
Annelida	Polychaeta	Phyllodocida	Nereididae	*Platynereis bicanaliculata*	1				1				1					1	0.5%	23
Annelida	Polychaeta	Terebellida	Terebellidae	*Polycirrus sp.*														1	0.1%	45
Annelida	Polychaeta	Spionida	Spionidae	*Polydora cornuta*										1					0.1%	45
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio sp.*					3										0.4%	27
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio steenstrupi*	2			12		1				9				8	4.4%	5
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Schistomeringos rudolphi*	1	1					3	1		12				2	2.7%	6
Annelida	Polychaeta	Phyllodocida	Pilargidae	*Sigambra tentaculata*							1			1					0.3%	32
Cnidaria	Anthozoa	Actiniaria	Metridiidae	*Metridium senile*					1	1					1	1	1		0.7%	19
Crustacea (subphylum)	Malacostraca	Amphipoda	-	-												1			0.1%	45
Crustacea (subphylum)	Malacostraca	Decapoda	Caridea	-								1							0.1%	45
Crustacea (subphylum)	Malacostraca	Amphipoda	Corophiidae	-							1								0.1%	45
Crustacea (subphylum)	Malacostraca	Amphipoda	Melitidae	-				2											0.3%	32
Crustacea (subphylum)	Malacostraca	Decapoda	Paguroidea	-					3	3				5				2	1.8%	10
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	-					1										0.1%	45
Crustacea (subphylum)	Malacostraca	Decapoda	Cancridae	*Cancer sp.*	1			1		2									0.5%	23
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus sp.*												1			0.1%	45
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus taylori*	5	1													0.8%	17
Crustacea (subphylum)	Malacostraca	Decapoda	Crangonidae	*Mesocrangon munitella*	3														0.4%	27
Crustacea (subphylum)	Malacostraca	Decapoda	Crangonidae	*Neocrangon communis*													1		0.1%	45

Table 1. Benthic Community Census Count by Species, Total Abundance, and Species Richness - 21-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	Number of Individuals per Composite Sample														Taxa Abundance [8]	Taxa Rank [9]
					B22-1-MM-BENTHIC	B22-2-MM-BENTHIC	B22-3-MM-BENTHIC	B22-4-MM-BENTHIC	B22-5-MM-BENTHIC	B22-6-MM-BENTHIC	B22-7-MM-BENTHIC	B22-8-MM-BENTHIC	B22-9-MM-BENTHIC	B22-10-MM-BENTHIC	B22-1-RBS-BENTHIC	B22-2-RBS-BENTHIC	B22-3-RBS-BENTHIC	B22-4-RBS-BENTHIC		
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*		2													0.3%	32
Crustacea (subphylum)	Maxillopoda	Balanomorpha	-	-			4			1			1					1	1.0%	16
Echinodermata	Ophiuroidea	Ophiurida	Amphiuridae	-				2											0.3%	32
Mollusca	Bivalvia	-	-	-	1	1		11				1	2					1	2.3%	8
Mollusca	Bivalvia	Veneroida	Veneridae	-				1											0.1%	45
Mollusca	Bivalvia	Veneroida	Cardiidae	*Clinocardium nuttallii*				1											0.1%	45
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Kurtiella tumida*		1		11			1	1	1	6			1	21	5.9%	4
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma calcarea*				1				1							0.3%	32
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*			2	3									3	1	1.2%	13
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma sp.*	1		1	1	1									1	0.7%	19
Mollusca	Bivalvia	Mytiloida	Mytilidae	*Modiolus sp.*				3			3	1		1			1		1.2%	13
Mollusca	Bivalvia	Pectinoida	Anomiidae	*Pododesmus macrochisma*						1									0.1%	45
Mollusca	Gastropoda	-	-	-							1								0.1%	45
Mollusca	Gastropoda	Nudibranchia (clade)	Onchidorididae	-				1		2		1							0.5%	23
Mollusca	Gastropoda	Nudibranchia (clade)	-	-														1	0.1%	45
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania compacta*	1			2		2			2	3				2	1.6%	12
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*								1						2	0.4%	27
Nemertea	Anopla	Heteronemertea	Lineidae	*Lineus sp.*					1										0.1%	45
Platyhelminthes	Rhabditophora	Polycladida	Leptoplanidae	-	1														0.1%	45
Number of Individuals [2]					**70**	**12**	**12**	**223**	**31**	**27**	**18**	**27**	**26**	**81**	**9**	**10**	**48**	**136**		
Total Abundance (number of individuals per m^2) [3]					**7778**	**1333**	**1333**	**24778**	**3444**	**3000**	**2000**	**3000**	**2889**	**9000**	**1000**	**1111**	**5333**	**15111**		
Species Richness (number of taxa) [4]					**18**	**8**	**6**	**27**	**16**	**13**	**9**	**10**	**11**	**16**	**4**	**7**	**9**	**26**		
Total abundance of the 5 most abundant taxa [5]				***Armandia brevis***	**4000**	**0**	**0**	**13889**	**0**	**222**	**0**	**0**	**222**	**2333**	**0**	**222**	**3444**	**5222**		
				Micropodarke dubia	**667**	**0**	**0**	**3333**	**0**	**0**	**111**	**0**	**1000**	**111**	**0**	**222**	**778**	**3000**		
				***Aphelochaeta glandaria* Complex**	**0**	**0**	**0**	**333**	**667**	**889**	**667**	**1778**	**333**	**1000**	**0**	**0**	**0**	**222**		
				Kurtiella tumida	**0**	**111**	**0**	**1222**	**0**	**0**	**111**	**111**	**111**	**667**	**0**	**0**	**111**	**2333**		
				Prionospio steenstrupi	**222**	**0**	**0**	**1333**	**0**	**111**	**0**	**0**	**0**	**1000**	**0**	**0**	**0**	**889**		
				Total Abundance [6]	**4889**	**111**	**0**	**20111**	**667**	**1222**	**889**	**1889**	**1667**	**5111**	**0**	**444**	**4333**	**11667**		
				Percentage of Total Abundance [7]	**62.9%**	**8.3%**	**0.0%**	**81.2%**	**19.4%**	**40.7%**	**44.4%**	**63.0%**	**57.7%**	**56.8%**	**0.0%**	**40.0%**	**81.3%**	**77.2%**		

Notes:
[1] Samples were collected by ENVIRON International Corporation, benthic macroinvertebrate were identified to the lowest taxonomic level by EcoAnalysts, Inc. Taxa structure corresponds to World Register of Marine Species (http://www.marinespecies.org).
[2] Number of Individuals is the total number of identifiable benthic invertebrate collected in each composite sample.
[3] Total Abundance is the number of individuals divided by the sample area (US EPA 1987). Area sampled at each station was 0.009 m^2.
[4] Species Richness is the number of different taxon collected in each composite sample.
[5] The five most abundant taxa were determined overall for the sampling event. Total abundance for these taxa was calculated as the number of individuals divided by the sample area (US EPA 1987).
[6] Total abundance of the 5 most abundant taxa is the sum of the total abundance for the five most abundant taxa in this sampling event.
[7] Percentage of Total Abundance is the Total abundance of the 5 most abundant taxa divided by the total abundance overall for the sample.
[8] Taxa Abundance is the sum of the number of individuals for each taxa divided by the total number of individuals for all samples.
[9] Taxa Rank is the rank of the taxa abundance for all samples.

Table 2. Shannon–Weiner Diversity (H') and Pielou's Evenness (J') - 21-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	$pi \times \ln(pi)$ [1]													
					B22-1-MM-BENTHIC	B22-2-MM-BENTHIC	B22-3-MM-BENTHIC	B22-4-MM-BENTHIC	B22-5-MM-BENTHIC	B22-6-MM-BENTHIC	B22-7-MM-BENTHIC	B22-8-MM-BENTHIC	B22-9-MM-BENTHIC	B22-10-MM-BENTH	B22-1-RBS-BENTH	B22-2-RBS-BENTH	B22-3-RBS-BENTH	B22-4-RBS-BENTH
Annelida	Clitellata, Oligochaeta	-	-	-				-0.02										-0.06
Annelida	Polychaeta	Terebellida	Cirratulidae	-			-0.30											
Annelida	Polychaeta	Capitellida	Capitellidae	-		-0.37		-0.02										
Annelida	Polychaeta	Terebellida	Ampharetidae	*Ampharete finmarchica*					-0.18									-0.06
Annelida	Polychaeta	Terebellida	Cirratulidae	*Aphelochaeta glandaria*				-0.06	-0.32	-0.36	-0.37	-0.31	-0.25	-0.24				-0.06
Annelida	Polychaeta	Opheliida	Opheliidae	*Armandia brevis*	-0.34			-0.32		-0.19			-0.20	-0.35		-0.32	-0.28	-0.37
Annelida	Polychaeta	Phyllodocida	Nephtyidae	*Bipalponephtys cornuta*					-0.18									
Annelida	Polychaeta	Capitellida	Capitellidae	*Capitella capitata*	-0.19	-0.21							-0.13		-0.36	-0.32		
Annelida	Polychaeta	Terebellida	Cirratulidae	*Caulleriella cf. alata*				-0.02						-0.15				
Annelida	Polychaeta	Terebellida	Cirratulidae	*Chaetozone acuta*				-0.02										
Annelida	Polychaeta	Terebellida	Cirratulidae	*Cirratulus spectabilis*		-0.21					-0.16							
Annelida	Polychaeta	Spionida	Spionidae	*Dipolydora socialis*	-0.06													-0.04
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eulalia levicornuta Cmplx*	-0.06													-0.04
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eulalia sp.*					-0.11									
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eumida longicornuta*											-0.24			
Annelida	Polychaeta	Terebellida	Terebellidae	*Eupolymnia heterobranchia*														-0.04
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Glycinde picta*	-0.10		-0.21	-0.06	-0.11	-0.19			-0.25	-0.09				
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Goniada littorea*														-0.06
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Harmothoe imbricata*	-0.06				-0.18	-0.12							-0.13	-0.06
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Lepidonotus spiculus*					-0.18									
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Lumbrineris latreilli*				-0.04										
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Micropodarke dubia*	-0.21			-0.27			-0.16		-0.37	-0.05		-0.32	-0.28	-0.32
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Mystides borealis*										-0.05				
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Oxydromus pugettensis*			-0.30	-0.02	-0.23			-0.24		-0.15	-0.37	-0.23	-0.08	-0.04
Annelida	Polychaeta	Phyllodocida	Chrysopetalidae	*Paleanotus bellis*				-0.02	-0.11				-0.13					-0.08
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio alata*						-0.12								
Annelida	Polychaeta	Phyllodocida	Pholoidae	*Pholoe minuta*	-0.06			-0.02						-0.05				
Annelida	Polychaeta	Phyllodocida	Sigalionidae	*Pholoides asperus*														-0.04
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Phyllodoce groenlandica*				-0.02										
Annelida	Polychaeta	Phyllodocida	Nereididae	*Platynereis bicanaliculata*	-0.06				-0.11				-0.13					-0.04
Annelida	Polychaeta	Terebellida	Terebellidae	*Polycirrus sp.*														-0.04
Annelida	Polychaeta	Spionida	Spionidae	*Polydora cornuta*										-0.05				
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio sp.*					-0.23									
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio steenstrupi*	-0.10			-0.16		-0.12				-0.24				-0.17
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Schistomeringos rudolphi*	-0.06	-0.21					-0.30	-0.12		-0.28				-0.06
Annelida	Polychaeta	Phyllodocida	Pilargidae	*Sigambra tentaculata*							-0.16			-0.05				
Cnidaria	Anthozoa	Actiniaria	Metridiidae	*Metridium senile*					-0.11	-0.12					-0.24	-0.23	-0.08	
Crustacea (subphylum)	Malacostraca	Amphipoda	-	-												-0.23		
Crustacea (subphylum)	Malacostraca	Decapoda	Caridea	-								-0.12						
Crustacea (subphylum)	Malacostraca	Amphipoda	Corophiidae	-							-0.16							
Crustacea (subphylum)	Malacostraca	Amphipoda	Melitidae	-				-0.04										

Table 2. Shannon–Weiner Diversity (H') and Pielou's Evenness (J') - 21-Month Sampling Event

SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	p*i* × ln(p*i*) [1]													
					B22-1-MM-BENTHIC	B22-2-MM-BENTHIC	B22-3-MM-BENTHIC	B22-4-MM-BENTHIC	B22-5-MM-BENTHIC	B22-6-MM-BENTHIC	B22-7-MM-BENTHIC	B22-8-MM-BENTHIC	B22-9-MM-BENTHIC	B22-10-MM-BENTH	B22-1-RBS-BENTHI	B22-2-RBS-BENTHI	B22-3-RBS-BENTHI	B22-4-RBS-BENTHI
Crustacea (subphylum)	Malacostraca	Decapoda	Paguroidea	-					-0.23	-0.24				-0.17				-0.06
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	-					-0.11									
Crustacea (subphylum)	Malacostraca	Decapoda	Cancridae	*Cancer sp.*	-0.06			-0.02		-0.19								
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus sp.*												-0.23		
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus taylori*	-0.19	-0.21												
Crustacea (subphylum)	Malacostraca	Decapoda	Crangonidae	*Mesocrangon munitella*	-0.13													
Crustacea (subphylum)	Malacostraca	Decapoda	Crangonidae	*Neocrangon communis*													-0.08	
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*		-0.30												
Crustacea (subphylum)	Maxillopoda	Balanomorpha	-	-			-0.37			-0.12			-0.13					-0.04
Echinodermata	Ophiuroidea	Ophiurida	Amphiuridae	-				-0.04										
Mollusca	Bivalvia	-	-	-	-0.06	-0.21		-0.15				-0.12	-0.20					-0.04
Mollusca	Bivalvia	Veneroida	Veneridae	-				-0.02										
Mollusca	Bivalvia	Veneroida	Cardiidae	*Clinocardium nuttallii*				-0.02										
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Kurtiella tumida*		-0.21		-0.15			-0.16	-0.12	-0.13	-0.19			-0.08	-0.29
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma calcarea*				-0.02				-0.12						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*			-0.30	-0.06									-0.17	-0.04
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma sp.*	-0.06		-0.21	-0.02	-0.11									-0.04
Mollusca	Bivalvia	Mytiloida	Mytilidae	*Modiolus sp.*				-0.06			-0.30	-0.12		-0.05			-0.08	
Mollusca	Bivalvia	Pectinoida	Anomiidae	*Pododesmus macrochisma*						-0.12								
Mollusca	Gastropoda	-	-	-							-0.16							
Mollusca	Gastropoda	Nudibranchia (clade)	Onchidorididae	-				-0.02		-0.19		-0.12						
Mollusca	Gastropoda	Nudibranchia (clade)	-	-														-0.04
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania compacta*	-0.06			-0.04		-0.19			-0.20	-0.12				-0.06
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*								-0.12						-0.06
Nemertea	Anopla	Heteronemertea	Lineidae	*Lineus sp.*					-0.11									
Platyhelminthes	Rhabditophora	Polycladida	Leptoplanidae	-	-0.06													
Shannon-Weiner Diversity (H') [2]					**1.94**	**1.91**	**1.68**	**1.79**	**2.59**	**2.30**	**1.93**	**1.53**	**2.08**	**2.32**	**1.21**	**1.89**	**1.27**	**2.22**
Pielou's Evenness (J') [3]					**0.67**	**0.92**	**0.94**	**0.54**	**0.93**	**0.90**	**0.88**	**0.66**	**0.87**	**0.84**	**0.88**	**0.97**	**0.58**	**0.68**

Notes:

[1] p*i* is the proportion of individuals in species *i* to the total number of individuals in each sample. Ln is the natural logarithm of p*i*.

[2] Shannon-Wiener Diversity (H') is calculated as the sum of p*i*×ln(p*i*) for each species in each sample (Becker et al. 2011, USEPA 1987).

[3] Pielou's Evenness (J') is calculated as H' divided by the natural logarithm of the number of taxa (Becker et al. 2011, USEPA 1987).

Table 3. Swartz's Dominance Index (SDI) - 21-Month Sampling Event

SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	p_i [1]													
					B22-1-MM-BENTHIC	B22-2-MM-BENTHIC	B22-3-MM-BENTHIC	B22-4-MM-BENTHIC	B22-5-MM-BENTHIC	B22-6-MM-BENTHIC	B22-7-MM-BENTHIC	B22-8-MM-BENTHIC	B22-9-MM-BENTHIC	B22-10-MM-BENTHIC	B22-1-RBS-BENTHIC	B22-2-RBS-BENTHIC	B22-3-RBS-BENTHIC	B22-4-RBS-BENTHIC
Annelida	Clitellata, Oligochaeta	-	-	-				0.4%										1.5%
Annelida	Polychaeta	Terebellida	Cirratulidae	-			16.7%											
Annelida	Polychaeta	Capitellida	Capitellidae	-		33.3%		0.4%										
Annelida	Polychaeta	Terebellida	Ampharetidae	*Ampharete finmarchica*					6.5%									1.5%
Annelida	Polychaeta	Terebellida	Cirratulidae	*Aphelochaeta glandaria*				1.3%	19.4%	29.6%	33.3%	59.3%	11.5%	11.1%				1.5%
Annelida	Polychaeta	Opheliida	Opheliidae	*Armandia brevis*	51.4%			56.1%		7.4%			7.7%	25.9%		20.0%	64.6%	34.6%
Annelida	Polychaeta	Phyllodocida	Nephtyidae	*Bipalponephtys cornuta*					6.5%									
Annelida	Polychaeta	Capitellida	Capitellidae	*Capitella capitata*	7.1%	8.3%							3.8%		44.4%	20.0%		
Annelida	Polychaeta	Terebellida	Cirratulidae	*Caulleriella cf. alata*				0.4%						4.9%				
Annelida	Polychaeta	Terebellida	Cirratulidae	*Chaetozone acuta*				0.4%										
Annelida	Polychaeta	Terebellida	Cirratulidae	*Cirratulus spectabilis*		8.3%					5.6%							
Annelida	Polychaeta	Spionida	Spionidae	*Dipolydora socialis*	1.4%													0.7%
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eulalia levicornuta Cmplx*	1.4%													0.7%
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eulalia sp.*					3.2%									
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Eumida longicornuta*											11.1%			
Annelida	Polychaeta	Terebellida	Terebellidae	*Eupolymnia heterobranchia*														0.7%
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Glycinde picta*	2.9%		8.3%	1.3%	3.2%	7.4%			11.5%	2.5%				
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Goniada littorea*														1.5%
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Harmothoe imbricata*	1.4%				6.5%	3.7%							4.2%	1.5%
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Lepidonotus spiculus*					6.5%									
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Lumbrineris latreilli*				0.9%										
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Micropodarke dubia*	8.6%			13.5%			5.6%		34.6%	1.2%		20.0%	14.6%	19.9%
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Mystides borealis*										1.2%				
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Oxydromus pugettensis*			16.7%	0.4%	9.7%			11.1%		4.9%	33.3%	10.0%	2.1%	0.7%
Annelida	Polychaeta	Phyllodocida	Chrysopetalidae	*Paleanotus bellis*				0.4%	3.2%				3.8%					2.2%
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio alata*						3.7%								
Annelida	Polychaeta	Phyllodocida	Pholoidae	*Pholoe minuta*	1.4%			0.4%						1.2%				
Annelida	Polychaeta	Phyllodocida	Sigalionidae	*Pholoides asperus*														0.7%
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	*Phyllodoce groenlandica*				0.4%										
Annelida	Polychaeta	Phyllodocida	Nereididae	*Platynereis bicanaliculata*	1.4%				3.2%				3.8%					0.7%
Annelida	Polychaeta	Terebellida	Terebellidae	*Polycirrus sp.*														0.7%
Annelida	Polychaeta	Spionida	Spionidae	*Polydora cornuta*										1.2%				
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio sp.*					9.7%									
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio steenstrupi*	2.9%			5.4%		3.7%				11.1%				5.9%
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Schistomeringos rudolphi*	1.4%	8.3%					16.7%	3.7%		14.8%				1.5%
Annelida	Polychaeta	Phyllodocida	Pilargidae	*Sigambra tentaculata*							5.6%			1.2%				
Cnidaria	Anthozoa	Actiniaria	Metridiidae	*Metridium senile*					3.2%	3.7%					11.1%	10.0%	2.1%	
Crustacea (subphylum)	Malacostraca	Amphipoda	-	-												10.0%		
Crustacea (subphylum)	Malacostraca	Decapoda	Caridea	-								3.7%						
Crustacea (subphylum)	Malacostraca	Amphipoda	Corophiidae	-							5.6%							

Table 3. Swartz's Dominance Index (SDI) - 21-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum (unless otherwise specified)	Class (unless otherwise specified)	Order (unless otherwise specified)	Family (unless otherwise specified)	Scientific Name (unless otherwise specified)	p*i* [1]													
					B22-1-MM-BENTHIC	B22-2-MM-BENTHIC	B22-3-MM-BENTHIC	B22-4-MM-BENTHIC	B22-5-MM-BENTHIC	B22-6-MM-BENTHIC	B22-7-MM-BENTHIC	B22-8-MM-BENTHIC	B22-9-MM-BENTHIC	B22-10-MM-BENTHIC	B22-1-RBS-BENTHIC	B22-2-RBS-BENTHIC	B22-3-RBS-BENTHIC	B22-4-RBS-BENTHIC
Crustacea (subphylum)	Malacostraca	Amphipoda	Melitidae	-				0.9%										
Crustacea (subphylum)	Malacostraca	Decapoda	Paguroidea	-					9.7%	11.1%				6.2%				1.5%
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	-					3.2%									
Crustacea (subphylum)	Malacostraca	Decapoda	Cancridae	*Cancer sp.*	1.4%			0.4%		7.4%								
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus sp.*												10.0%		
Crustacea (subphylum)	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus taylori*	7.1%	8.3%												
Crustacea (subphylum)	Malacostraca	Decapoda	Crangonidae	*Mesocrangon munitella*	4.3%													
Crustacea (subphylum)	Malacostraca	Decapoda	Crangonidae	*Neocrangon communis*													2.1%	
Crustacea (subphylum)	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*		16.7%												
Crustacea (subphylum)	Maxillopoda	Balanomorpha	-	-			33.3%			3.7%			3.8%					0.7%
Echinodermata	Ophiuroidea	Ophiurida	Amphiuridae	-				0.9%										
Mollusca	Bivalvia	-	-	-	1.4%	8.3%		4.9%				3.7%	7.7%					0.7%
Mollusca	Bivalvia	Veneroida	Veneridae	-				0.4%										
Mollusca	Bivalvia	Veneroida	Cardiidae	*Clinocardium nuttallii*				0.4%										
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Kurtiella tumida*		8.3%		4.9%			5.6%	3.7%	3.8%	7.4%			2.1%	15.4%
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma calcarea*				0.4%				3.7%						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*			16.7%	1.3%									6.3%	0.7%
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma sp.*	1.4%		8.3%	0.4%	3.2%									0.7%
Mollusca	Bivalvia	Mytiloida	Mytilidae	*Modiolus sp.*				1.3%			16.7%	3.7%		1.2%			2.1%	
Mollusca	Bivalvia	Pectinoida	Anomiidae	*Pododesmus macrochisma*						3.7%								
Mollusca	Gastropoda	-	-	-							5.6%							
Mollusca	Gastropoda	Nudibranchia (clade)	Onchidorididae	-				0.4%		7.4%		3.7%						
Mollusca	Gastropoda	Nudibranchia (clade)	-	-														0.7%
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania compacta*	1.4%			0.9%		7.4%			7.7%	3.7%				1.5%
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*								3.7%						1.5%
Nemertea	Anopla	Heteronemertea	Lineidae	*Lineus sp.*					3.2%									
Platyhelminthes	Rhabditophora	Polycladida	Leptoplanidae	-	1.4%													
Swartz's Dominance Index (SDI) [2]					**5**	**5**	**4**	**4**	**9**	**7**	**5**	**4**	**6**	**6**	**2**	**5**	**2**	**4**

Notes:
[1] p*i* is the proportion of individuals in species *i* to the total number of individuals in each sample.
[2] Swartz's Dominance Index (SDI) is the minimum number of species required to account for 75 percent of individuals in a sample (Becker et al. 2011, USEPA 1987).

Table 4. Summary of Benthic Community Census Metrics - 21-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Station	Located Within Cap Target Area	Total Abundance (number of individuals per m^2)	Species Richness	Shannon-Wiener Diversity	Pielou's Evenness	Swartz's Dominance Index	Percentage of Total Abundance Comprised of 5 Most Abundant Taxa
1-MM	Yes	7,778	18	1.94	0.67	5	62.9%
2-MM	Yes	1,333	8	1.91	0.92	5	8.3%
3-MM	Yes	1,333	6	1.68	0.94	4	0.0%
4-MM	Yes	24,778	27	1.79	0.54	4	81.2%
5-MM	Yes	3,444	16	2.59	0.93	9	19.4%
6-MM	Yes	3,000	13	2.30	0.90	7	40.7%
7-MM	Yes	2,000	9	1.93	0.88	5	44.4%
8-MM	Yes	3,000	10	1.53	0.66	4	63.0%
9-MM	Yes	2,889	11	2.08	0.87	6	57.7%
10-MM	Yes	9,000	16	2.32	0.84	6	56.8%
1-RBS	No	1,000	4	1.21	0.88	2	0.0%
2-RBS	No	1,111	7	1.89	0.97	5	40.0%
3-RBS	No	5,333	9	1.27	0.58	2	81.3%
4-RBS	No	15,111	26	2.22	0.68	4	77.2%

Table 1. Benthic Community Census Count by Species, Total Abundance, and Species Richness - 33-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum	Class	Order	Family	Species	Number of Individuals per Composite Sample [1]														Taxa Abundance [8]	Taxa Rank [9]
					B33-1-MM-BENTHIC	B33-2-MM-BENTHIC	B33-3-MM-BENTHIC	B33-4-MM-BENTHIC	B33-5-MM-BENTHIC	B33-6-MM-BENTHIC	B33-7-MM-BENTHIC	B33-8-MM-BENTHIC	B33-9-MM-BENTHIC	B33-10-MM-BENTHIC	B33-1-RBS-BENTHIC	B33-2-RBS-BENTHIC	B33-3-RBS-BENTHIC	B33-4-RBS-BENTHIC		
Annelida	Oligochaeta	--	--	--				1										1	0.4%	22
Annelida	Polychaeta	Opheliida	Opheliidae	*Armandia brevis*	8	1	3	5						2	11		1	14	7.9%	2
Annelida	Polychaeta	Aciculata	Nephtyidae	*Bipalponephtys cornuta*		1										3			0.7%	14
Annelida	Polychaeta	Canalipalpata	Cirratulidae	*Caulleriella hamata*				2										1	0.5%	16
Annelida	Polychaeta	Canalipalpata	Cirratulidae	*Chaetozone acuta*			1	1											0.4%	22
Annelida	Polychaeta	Canalipalpata	Cirratulidae	--	1				2										0.5%	16
Annelida	Polychaeta	Aciculata	Dorvilleidae	--			1												0.2%	33
Annelida	Polychaeta	Canalipalpata	Ampharetidae	*Eclysippe trilobata*											1				0.2%	33
Annelida	Polychaeta	Aciculata	Goniadidae	*Glycinde armigera*	2							1							0.5%	16
Annelida	Polychaeta	Aciculata	Goniadidae	--									1						0.2%	33
Annelida	Polychaeta	Aciculata	Polynoidae	*Harmothoe imbricata*				2											0.4%	22
Annelida	Polychaeta	Aciculata	Hesionidae	--								1							0.2%	33
Annelida	Polychaeta	Aciculata	Hesionidae	*Kefersteinia cirrata*	3	1	2	10							1			3	3.5%	4
Annelida	Polychaeta	Aciculata	Hesionidae	*Oxydromus pugettensis*		1	1	1									1		0.7%	14
Annelida	Polychaeta	Aciculata	Chrysopetalidae	*Paleanotus bellis*			1												0.2%	33
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio alata*												1			0.2%	33
Annelida	Polychaeta	Aciculata	Pholoidae	*Pholoe minuta*								1							0.2%	33
Annelida	Polychaeta	Aciculata	Sigalionidae	*Pholoides asperus*			2												0.4%	22
Annelida	Polychaeta	Aciculata	Phyllodocidae	--				1											0.2%	33
Annelida	Polychaeta	Aciculata	Nereididae	*Platynereis bicanaliculata*													1		0.2%	33
Annelida	Polychaeta	Aciculata	Hesionidae	*Podarkeopsis brevipalpa*	1			1						1					0.5%	16
Annelida	Polychaeta	Canalipalpata	Terebellidae	*Polycirrus sp. II sensu Banse 1980*		1													0.2%	33
Annelida	Polychaeta	Canalipalpata	Spionidae	*Prionospio cirrifera*											1				0.2%	33
Annelida	Polychaeta	Canalipalpata	Spionidae	*Prionospio sp.*	1									1					0.4%	22
Annelida	Polychaeta	Canalipalpata	Spionidae	*Prionospio steenstrupi*		1		3				2							1.1%	13
Annelida	Polychaeta	Aciculata	Dorvilleidae	*Schistomeringos rudolphi*	3	1	1	1									1		1.2%	8
Annelida	Polychaeta	Aciculata	Lumbrineridae	*Scoletoma luti*												1			0.2%	33
Annelida	Polychaeta	Aciculata	Lumbrineridae	*Scoletoma sp.*								1							0.2%	33
Annelida	Polychaeta	Aciculata	Pilargidae	*Sigambra tentaculata*				1											0.2%	33
Arthropoda	Maxillopoda	Sessilia	Balanidae	--			1												0.2%	33
Arthropoda	Maxillopoda	Sessilia	Balanidae	*Balanus crenatus*	81		100	6	1	33			13		3			72	54%	1
Crustacea	Malacostraca	Amphipoda	--	--			1												0.2%	33
Crustacea	Malacostraca	Amphipoda	Aoridae	*Bemlos sp.*														1	0.2%	33
Crustacea	Malacostraca	Decapoda	Crangonidae	--												2			0.4%	22
Crustacea	Malacostraca	Amphipoda	Melitidae	*Desdimelita desdichada*	4			5				2							1.9%	6
Crustacea	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus pugettensis*	4	5													1.6%	7
Crustacea	Malacostraca	Isopoda	Janiridae	*Ianiropsis sp.*							1								0.2%	33
Crustacea	Malacostraca	Decapoda	Cancridae	*Metacarcinus gracilis*		1	1	3	1	2	1		2	6				1	3.2%	5
Crustacea	Malacostraca	Leptostraca	Nebaliidae	*Nebalia pugettensis Cmplx*			1										1		0.4%	22
Crustacea	Malacostraca	Decapoda	Paguridae	--			1												0.2%	33
Crustacea	Malacostraca	Decapoda	Paguridae	*Pagurus beringanus*				3											0.5%	16
Crustacea	Malacostraca	Decapoda	Paguridae	*Pagurus sp.*									2						0.4%	22
Crustacea	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*						1		1							0.4%	22
Crustacea	Malacostraca	Decapoda	Porcellanidae	--			1										1		0.4%	22
Arthropoda	Insecta	Diptera	Chironomidae	*Ablabesmyia sp.*										1					0.2%	33
Arthropoda	Insecta	Diptera	Chironomidae	*Dicrotendipes sp.*				1											0.2%	33
Arthropoda	Insecta	Diptera	Chironomidae	*Orthocladius Complex*				1											0.2%	33
Arthropoda	Insecta	Diptera	Chironomidae	*Polypedilum sp.*	1			4						2					1.2%	8
Arthropoda	Insecta	Diptera	Chironomidae	*Rheotanytarsus sp.*											1				0.2%	33

Table 1. Benthic Community Census Count by Species, Total Abundance, and Species Richness - 33-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum	Class	Order	Family	Species	Number of Individuals per Composite Sample [1]														Taxa Abundance [8]	Taxa Rank [9]
					B33-1-MM-BENTHIC	B33-2-MM-BENTHIC	B33-3-MM-BENTHIC	B33-4-MM-BENTHIC	B33-5-MM-BENTHIC	B33-6-MM-BENTHIC	B33-7-MM-BENTHIC	B33-8-MM-BENTHIC	B33-9-MM-BENTHIC	B33-10-MM-BENTHIC	B33-1-RBS-BENTHIC	B33-2-RBS-BENTHIC	B33-3-RBS-BENTHIC	B33-4-RBS-BENTHIC		
Arthropoda	Insecta	Diptera	Chironomidae	*Tanytarsus sp.*											1				0.2%	33
Arthropoda	Insecta	Diptera	Chironomidae	*Thienemannimyia gr. sp.*										1					0.2%	33
Mollusca	Bivalvia	Bivalvia	--	--									1					2	0.5%	16
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma inquinata*	4			2									1		1.2%	8
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*								1							0.2%	33
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma sp.*												1			0.2%	33
Mollusca	Bivalvia	Mytiloida	Mytilidae	--							1								0.2%	33
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	15			5				3	1	8	1			5	6.7%	3
Mollusca	Bivalvia	Veneroida	Veneridae	*Saxidomus gigantea*				2											0.4%	22
Mollusca	Gastropoda	Neotaenioglossa	Rissoidae	*Alvania compacta*			1			1			2				2	1	1.2%	8
Mollusca	Gastropoda	Neotaenioglossa	Calyptraeidae	*Crepidula sp.*														1	0.2%	33
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*				1										6	1.2%	8
Number of Individuals [2]					**128**	**13**	**119**	**62**	**4**	**37**	**3**	**13**	**22**	**22**	**20**	**8**	**9**	**108**		
Total Abundance (number of individuals per m^2) [3]					**14,222**	**1,444**	**13,222**	**6,889**	**444**	**4,111**	**333**	**1,444**	**2,444**	**2,444**	**2,222**	**889**	**1,000**	**12,000**		
Species Richness (number of taxa) [4]					**13**	**9**	**16**	**23**	**3**	**4**	**3**	**9**	**7**	**8**	**8**	**5**	**8**	**12**		
Total abundance of the 5 most abundant taxa [5]				*Balanus crenatus*	**9,000**	**0**	**11,111**	**667**	**111**	**3,667**	**0**	**0**	**1,444**	**0**	**333**	**0**	**0**	**8,000**		
				Armandia brevis	**889**	**111**	**333**	**556**	**0**	**0**	**0**	**0**	**0**	**222**	**1,222**	**0**	**111**	**1,556**		
				Rochefortia tumida	**1,667**	**0**	**0**	**556**	**0**	**0**	**0**	**333**	**111**	**889**	**111**	**0**	**0**	**556**		
				Kefersteinia cirrata	**333**	**111**	**222**	**1,111**	**0**	**0**	**0**	**0**	**0**	**0**	**111**	**0**	**0**	**333**		
				Metacarcinus gracilis	**0**	**111**	**111**	**333**	**111**	**222**	**111**	**0**	**222**	**667**	**0**	**0**	**0**	**111**		
				Total Abundance [6]	**11,889**	**333**	**11,778**	**3,222**	**222**	**3,889**	**111**	**333**	**1,778**	**1,778**	**1,778**	**0**	**111**	**10,556**		
				Percentage of Total Abundance [7]	**84%**	**23%**	**89%**	**47%**	**50%**	**95%**	**33%**	**23%**	**73%**	**73%**	**80%**	**0%**	**11%**	**88%**		

Notes:
1 Samples were collected by Ramboll Environ US Corporation. Benthic macroinvertebrate were identified to the lowest taxonomic level by EcoAnalysts, Inc. Taxa structure was provided by EcoAnalysts, Inc.
2 Number of Individuals is the total number of identifiable benthic invertebrate collected in each composite sample.
3 Total Abundance is the number of individuals divided by the sample area (USEPA, 1987). Area sampled at each station was 0.009 m^2 (square meters).
4 Species Richness is the number of different taxon collected in each composite sample.
5 The five most abundant taxa were determined overall for the sampling event. Total abundance for these taxa was calculated as the number of individuals divided by the sample area (USEPA, 1987).
6 Total abundance of the 5 most abundant taxa is the sum of the total abundance for the five most abundant taxa in this sampling event.
7 Percentage of Total Abundance is the total abundance of the 5 most abundant taxa divided by the total abundance overall for the sample.
8 Taxa Abundance is the sum of the number of individuals for each taxa divided by the total number of individuals for all samples.
9 Taxa Rank is the rank of the taxa abundance for all samples.

Table 2. Shannon–Weiner Diversity (H') and Pielou's Evenness (J') - 33-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

					$p_i \times \ln(p_i)$ [1]													
Phylum	Class	Order	Family	Species	B33-1-MM-BENTHIC	B33-2-MM-BENTHIC	B33-3-MM-BENTHIC	B33-4-MM-BENTHIC	B33-5-MM-BENTHIC	B33-6-MM-BENTHIC	B33-7-MM-BENTHIC	B33-8-MM-BENTHIC	B33-9-MM-BENTHIC	B33-10-MM-BENTHIC	B33-1-RBS-BENTHIC	B33-2-RBS-BENTHIC	B33-3-RBS-BENTHIC	B33-4-RBS-BENTHIC
Annelida	Oligochaeta	--	--	--				-0.07										-0.04
Annelida	Polychaeta	Opheliida	Opheliidae	*Armandia brevis*	-0.17	-0.20	-0.09	-0.20						-0.22	-0.33		-0.24	-0.26
Annelida	Polychaeta	Phyllodocida	Nephtyidae	*Bipalponephtys cornuta*		-0.20										-0.37		
Annelida	Polychaeta	Terebellida	Cirratulidae	*Caulleriella hamata*				-0.11										-0.04
Annelida	Polychaeta	Terebellida	Cirratulidae	*Chaetozone acuta*			-0.04	-0.07										
Annelida	Polychaeta	Terebellida	Cirratulidae	--	-0.04				-0.35									
Annelida	Polychaeta	Eunicida	Dorvilleidae	--			-0.04											
Annelida	Polychaeta	Terebellida	Ampharetidae	*Eclysippe trilobata*											-0.15			
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Glycinde armigera*	-0.06							-0.20						
Annelida	Polychaeta	Phyllodocida	Goniadidae	--									-0.14					
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Harmothoe imbricata*				-0.11										
Annelida	Polychaeta	Phyllodocida	Hesionidae	--								-0.20						
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Kefersteinia cirrata*	-0.09	-0.20	-0.07	-0.29							-0.15			-0.10
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Oxydromus pugettensis*		-0.20	-0.04	-0.07									-0.24	
Annelida	Polychaeta	Phyllodocida	Chrysopetalidae	*Paleanotus bellis*			-0.04											
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio alata*												-0.26		
Annelida	Polychaeta	Phyllodocida	Pholoidae	*Pholoe minuta*								-0.20						
Annelida	Polychaeta	Phyllodocida	Sigalionidae	*Pholoides asperus*			-0.07											
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	--				-0.07										
Annelida	Polychaeta	Phyllodocida	Nereididae	*Platynereis bicanaliculata*													-0.24	
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Podarkeopsis brevipalpa*	-0.04			-0.07						-0.14				
Annelida	Polychaeta	Terebellida	Terebellidae	*Polycirrus sp. II sensu Banse 1980*		-0.20												
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio cirrifera*											-0.15			
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio sp.*	-0.04									-0.14				
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio steenstrupi*		-0.20		-0.15				-0.29						
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Schistomeringos rudolphi*	-0.09	-0.20	-0.04	-0.07									-0.24	
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Scoletoma luti*												-0.26		
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Scoletoma sp.*								-0.20						
Annelida	Polychaeta	Phyllodocida	Pilargidae	*Sigambra tentaculata*				-0.07										
Arthropoda	Maxillopoda	Sessilia	Balanidae	--			-0.04											
Arthropoda	Maxillopoda	Sessilia	Balanidae	*Balanus crenatus*	-0.29		-0.15	-0.23	-0.35	-0.10			-0.31		-0.28			-0.27
Crustacea	Malacostraca	Amphipoda	--	--			-0.04											
Crustacea	Malacostraca	Amphipoda	Aoridae	*Bemlos sp.*														-0.04
Crustacea	Malacostraca	Decapoda	Crangonidae	--												-0.35		
Crustacea	Malacostraca	Amphipoda	Melitidae	*Desdimelita desdichada*	-0.11			-0.20				-0.29						
Crustacea	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus pugettensis*	-0.11	-0.37												
Crustacea	Malacostraca	Isopoda	Janiridae	*Ianiropsis sp.*							-0.37							
Crustacea	Malacostraca	Decapoda	Cancridae	*Metacarcinus gracilis*		-0.20	-0.04	-0.15	-0.35	-0.16	-0.37		-0.22	-0.35				-0.04
Crustacea	Malacostraca	Leptostraca	Nebaliidae	*Nebalia pugettensis Cmplx*			-0.04										-0.24	
Crustacea	Malacostraca	Decapoda	Paguridae	--			-0.04											
Crustacea	Malacostraca	Decapoda	Paguridae	*Pagurus beringanus*				-0.15										
Crustacea	Malacostraca	Decapoda	Paguridae	*Pagurus sp.*									-0.22					
Crustacea	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*						-0.10		-0.20						
Crustacea	Malacostraca	Decapoda	Porcellanidae	--			-0.04										-0.24	
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Ablabesmyia sp.*										-0.14				
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Dicrotendipes sp.*				-0.07										
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Orthocladius Complex*				-0.07										

Table 2. Shannon–Weiner Diversity (H') and Pielou's Evenness (J') - 33-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum	Class	Order	Family	Species	pi × ln(pi) [1]													
					B33-1-MM-BENTHIC	B33-2-MM-BENTHIC	B33-3-MM-BENTHIC	B33-4-MM-BENTHIC	B33-5-MM-BENTHIC	B33-6-MM-BENTHIC	B33-7-MM-BENTHIC	B33-8-MM-BENTHIC	B33-9-MM-BENTHIC	B33-10-MM-BENTHIC	B33-1-RBS-BENTHIC	B33-2-RBS-BENTHIC	B33-3-RBS-BENTHIC	B33-4-RBS-BENTHIC
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Polypedilum sp.*	-0.04			-0.18						-0.22				
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Rheotanytarsus sp.*											-0.15			
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Tanytarsus sp.*											-0.15			
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Thienemannimyia gr. sp.*										-0.14				
Mollusca	Bivalvia	Bivalvia	--	--									-0.14					-0.07
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma inquinata*	-0.11			-0.11									-0.24	
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*								-0.20						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma sp.*												-0.26		
Mollusca	Bivalvia	Mytiloida	Mytilidae	--							-0.37							
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	-0.25			-0.20				-0.34	-0.14	-0.37	-0.15			-0.14
Mollusca	Bivalvia	Veneroida	Veneridae	*Saxidomus gigantea*				-0.11										
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania compacta*			-0.04			-0.10			-0.22				-0.33	-0.04
Mollusca	Gastropoda	Littorinimorpha	Calyptraeidae	*Crepidula sp.*														-0.04
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*				-0.07										-0.16
Shannon-Weiner Diversity (H') [2]					**1.43**	**1.95**	**0.86**	**2.85**	**1.04**	**0.45**	**1.10**	**2.10**	**1.39**	**1.72**	**1.51**	**1.49**	**2.04**	**1.27**
Pielou's Evenness (J') [3]					**0.56**	**0.89**	**0.31**	**0.91**	**0.95**	**0.33**	**1.00**	**0.95**	**0.71**	**0.83**	**0.73**	**0.93**	**0.98**	**0.51**

Notes:
1 p*i* is the proportion of individuals in species *i* to the total number of individuals in each sample. Ln is the natural logarithm of p *i*.
2 Shannon-Wiener Diversity (H') is calculated as the sum of p*i* ×ln(p*i*) for each species in each sample (Becker et al., 2011; USEPA, 1987).
3 Pielou's Evenness (J') is calculated as H' divided by the natural logarithm of the number of taxa (Becker et al., 2011; USEPA, 1987).

Table 3. Swartz's Dominance Index (SDI) - 33-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum	Class	Order	Family	Species	pi [1]													
					B33-1-MM-BENTHIC	B33-2-MM-BENTHIC	B33-3-MM-BENTHIC	B33-4-MM-BENTHIC	B33-5-MM-BENTHIC	B33-6-MM-BENTHIC	B33-7-MM-BENTHIC	B33-8-MM-BENTHIC	B33-9-MM-BENTHIC	B33-10-MM-BENTHIC	B33-1-RBS-BENTHIC	B33-2-RBS-BENTHIC	B33-3-RBS-BENTHIC	B33-4-RBS-BENTHIC
Annelida	Oligochaeta	--	--	--				1.6%										0.9%
Annelida	Polychaeta	Opheliida	Opheliidae	*Armandia brevis*	6.3%	7.7%	2.5%	8.1%						9.1%	###		###	###
Annelida	Polychaeta	Phyllodocida	Nephtyidae	*Bipalponephtys cornuta*		7.7%										###		
Annelida	Polychaeta	Terebellida	Cirratulidae	*Caulleriella hamata*				3.2%										0.9%
Annelida	Polychaeta	Terebellida	Cirratulidae	*Chaetozone acuta*			0.8%	1.6%										
Annelida	Polychaeta	Terebellida	Cirratulidae	--	0.8%				###									
Annelida	Polychaeta	Eunicida	Dorvilleidae	--			0.8%											
Annelida	Polychaeta	Terebellida	Ampharetidae	*Eclysippe trilobata*											5.0%			
Annelida	Polychaeta	Phyllodocida	Goniadidae	*Glycinde armigera*	1.6%							7.7%						
Annelida	Polychaeta	Phyllodocida	Goniadidae	--									4.5%					
Annelida	Polychaeta	Phyllodocida	Polynoidae	*Harmothoe imbricata*				3.2%										
Annelida	Polychaeta	Phyllodocida	Hesionidae	--								7.7%						
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Kefersteinia cirrata*	2.3%	7.7%	1.7%	###							5.0%			2.8%
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Oxydromus pugettensis*		7.7%	0.8%	1.6%									###	
Annelida	Polychaeta	Phyllodocida	Chrysopetalidae	*Paleanotus bellis*			0.8%											
Annelida	Polychaeta	Spionida	Spionidae	*Paraprionospio alata*												###		
Annelida	Polychaeta	Phyllodocida	Pholoidae	*Pholoe minuta*								7.7%						
Annelida	Polychaeta	Phyllodocida	Sigalionidae	*Pholoides asperus*			1.7%											
Annelida	Polychaeta	Phyllodocida	Phyllodocidae	--				1.6%										
Annelida	Polychaeta	Phyllodocida	Nereididae	*Platynereis bicanaliculata*													###	
Annelida	Polychaeta	Phyllodocida	Hesionidae	*Podarkeopsis brevipalpa*	0.8%			1.6%						4.5%				
Annelida	Polychaeta	Terebellida	Terebellidae	*Polycirrus sp. II sensu Ban*		7.7%												
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio cirrifera*											5.0%			
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio sp.*	0.8%									4.5%				
Annelida	Polychaeta	Spionida	Spionidae	*Prionospio steenstrupi*		7.7%		4.8%				###						
Annelida	Polychaeta	Eunicida	Dorvilleidae	*Schistomeringos rudolphi*	2.3%	7.7%	0.8%	1.6%									###	
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Scoletoma luti*												###		
Annelida	Polychaeta	Eunicida	Lumbrineridae	*Scoletoma sp.*								7.7%						
Annelida	Polychaeta	Phyllodocida	Pilargidae	*Sigambra tentaculata*				1.6%										
Arthropoda	Maxillopoda	Sessilia	Balanidae	--			0.8%											
Arthropoda	Maxillopoda	Sessilia	Balanidae	*Balanus crenatus*	###		###	9.7%	###	###			###		###			###
Crustacea	Malacostraca	Amphipoda	--	--			0.8%											
Crustacea	Malacostraca	Amphipoda	Aoridae	*Bemlos sp.*														0.9%
Crustacea	Malacostraca	Decapoda	Crangonidae	--												###		
Crustacea	Malacostraca	Amphipoda	Melitidae	*Desdimelita desdichada*	3.1%			8.1%				###						
Crustacea	Malacostraca	Decapoda	Hippolytidae	*Heptacarpus pugettensis*	3.1%	###												
Crustacea	Malacostraca	Isopoda	Janiridae	*Ianiropsis sp.*							###							
Crustacea	Malacostraca	Decapoda	Cancridae	*Metacarcinus gracilis*		7.7%	0.8%	4.8%	###	5.4%	###		9.1%	###				0.9%
Crustacea	Malacostraca	Leptostraca	Nebaliidae	*Nebalia pugettensis Cmplx*			0.8%										###	

Table 3. Swartz's Dominance Index (SDI) - 33-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Phylum	Class	Order	Family	Species	pi [1]													
					B33-1-MM-BENTHIC	B33-2-MM-BENTHIC	B33-3-MM-BENTHIC	B33-4-MM-BENTHIC	B33-5-MM-BENTHIC	B33-6-MM-BENTHIC	B33-7-MM-BENTHIC	B33-8-MM-BENTHIC	B33-9-MM-BENTHIC	B33-10-MM-BENTHIC	B33-1-RBS-BENTHIC	B33-2-RBS-BENTHIC	B33-3-RBS-BENTHIC	B33-4-RBS-BENTHIC
Crustacea	Malacostraca	Decapoda	Paguridae	--			0.8%											
Crustacea	Malacostraca	Decapoda	Paguridae	*Pagurus beringanus*				4.8%										
Crustacea	Malacostraca	Decapoda	Paguridae	*Pagurus sp.*									9.1%					
Crustacea	Malacostraca	Decapoda	Pinnotheridae	*Pinnixa sp.*						2.7%		7.7%						
Crustacea	Malacostraca	Decapoda	Porcellanidae	--			0.8%										###	
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Ablabesmyia sp.*										4.5%				
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Dicrotendipes sp.*				1.6%										
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Orthocladius Complex*				1.6%										
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Polypedilum sp.*	0.8%			6.5%						9.1%				
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Rheotanytarsus sp.*											5.0%			
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Tanytarsus sp.*											5.0%			
Insecta	Diptera-Chironomidae	Diptera	Chironomidae	*Thienemannimyia gr. sp.*										4.5%				
Mollusca	Bivalvia	Bivalvia	--	--									4.5%					1.9%
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma inquinata*	3.1%			3.2%									###	
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma nasuta*								7.7%						
Mollusca	Bivalvia	Veneroida	Tellinidae	*Macoma sp.*												###		
Mollusca	Bivalvia	Mytiloida	Mytilidae	--							###							
Mollusca	Bivalvia	Veneroida	Lasaeidae	*Rochefortia tumida*	###			8.1%				###	4.5%	###	5.0%			4.6%
Mollusca	Bivalvia	Veneroida	Veneridae	*Saxidomus gigantea*				3.2%										
Mollusca	Gastropoda	Littorinimorpha	Rissoidae	*Alvania compacta*			0.8%			2.7%			9.1%				###	0.9%
Mollusca	Gastropoda	Littorinimorpha	Calyptraeidae	*Crepidula sp.*														0.9%
Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius mendicus*				1.6%										5.6%
Swartz's Dominance Index (SDI) [2]					**2**	**6**	**1**	**11**	**2**	**1**	**3**	**6**	**3**	**4**	**3**	**3**	**6**	**2**

Notes:
1 p*i* is the proportion of individuals in species *i* to the total number of individuals in each sample.
2 Swartz's Dominance Index (SDI) is the minimum number of species required to account for 75 percent of individuals in a sample (Becker et al., 2011; USEPA ,1987).

Table 4. Summary of Benthic Community Census Metrics - 33-Month Sampling Event
SPAWAR Systems Center Pacific
San Diego, California

Station	Located Within Cap Target Area	Total Abundance	Species Richness	Shannon-Wiener Diversity	Pielou's Evenness	Swartz's Dominance Index	Percentage of Total Abundance Comprised of 5 Most Abundant Taxa
1-MM	Yes	14,222	13	1.43	0.56	2	84%
2-MM	Yes	1,444	9	1.95	0.89	6	23%
3-MM	Yes	13,222	16	0.86	0.31	1	89%
4-MM	Yes	6,889	23	2.85	0.91	11	47%
5-MM	Yes	444	3	1.04	0.95	2	50%
6-MM	Yes	4,111	4	0.45	0.33	1	95%
7-MM	Yes	333	3	1.10	1.00	3	33%
8-MM	Yes	1,444	9	2.10	0.95	6	23%
9-MM	Yes	2,444	7	1.39	0.71	3	73%
10-MM	Yes	2,444	8	1.72	0.83	4	73%
1-RBS	No	2,222	8	1.51	0.73	3	80%
2-RBS	No	889	5	1.49	0.93	3	0%
3-RBS	No	1,000	8	2.04	0.98	6	11%
4-RBS	No	12,000	12	1.27	0.51	2	88%